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The Charm of Indo-Islamic Architecture

JOHN TERRY

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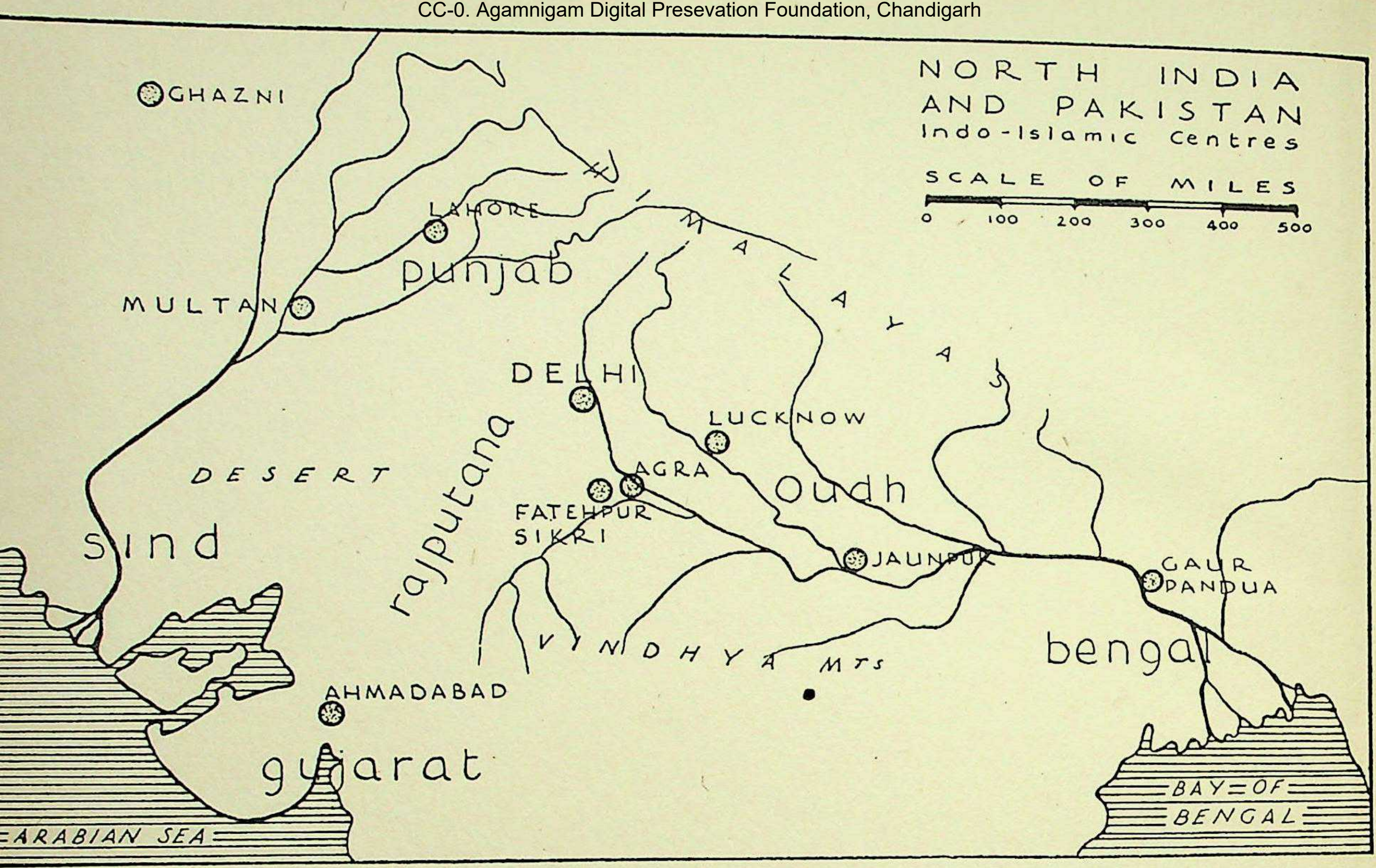

NORTH INDIA AND PAKISTAN
Indo-Islamic Centres
SCALE OF MILES
0
100
200
300
400
500
GHAZNI
LAHORE
HIMALAYAS
punjab
MULTAN
DELHI
LUCKNOW
DESERT
rajputana
AGRA
oudh
FATEHPUR SIKRI
sind
JAUNPUR
GAUR
PANDUA
VINDHYA MTS
bengal
AHMADABAD
gujarat
ARABIAN SEA
BAY OF BENGAL

The Charm of Indo-Islamic Architecture

An Introduction to the Northern Phase

by

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Preface

In so short an essay as this, drastic simplification is forced upon the writer. Inevitably, there are many omissions: —the wooden architecture of Kashmir, the tiled buildings of Lahore, and developments in the Mewat, are among the phases of Indo-Islamic building which are not touched upon. They lie apart, however, from the stream of development and are more suitable subjects for separate studies. Other writers have dealt with the present subject from the points of view of the art critic or the sociologist; for this reason, the present essay lays emphasis on structural developments: structure, after all, is the fundamental factor in architectural history.

I must thank, first of all, the staff and students of the Delhi School of Architecture for many stimulating discussions, which formed the primary inspiration for this essay. My thanks are also due to Brigadier Humphry Bullock, whose criticism has been invaluable and who gave most generous access to unpublished material of his own as well as much of his time in visiting buildings around the city of Delhi, and to my brother, Mark Dodd, for assistance in preparing the Bibliography.

The debt I (in common with many others) owe to Mr. Walter George, A.R.C.A., F.R.I.B.A., of New Delhi, is too great for adequate expression. As a token of my gratitude, this essay is dedicated to him in the hope that he may feel that some of his teaching has borne fruit.

Rawalpindi
November, 1952.

The background.

The development of Indo-Islamic architecture in India covers a period of six hundred years: from the first vigorous clumsy buildings of the Slave Kings in the thirteenth century, to the final overblown flutterings of the Court of Oudh in the early eighteen hundreds. During practically the whole of this time, the centre of the Muslim world in the Indian sub-continent was the city and environs of Delhi; and although very distinctive developments took place elsewhere, it is to the Court of Delhi that we return again and again. All building depends to some extent on patronage and of Indo-Islamic building this was particularly true. Muslim rulers governed a predominantly non-Muslim people and (except in certain parts of the country) there was little popular need for specifically Islamic building types. So what was built in the Muslim tradition was built more directly than usual for the princes and nobility: and even where Muslim folk-art traditions have appeared, they are usually found to be rooted in the production of luxury goods, rather than in the manufacture of daily necessities. I emphasise this point to explain the importance of developments in Delhi, the seat of Muslim power in India, even though the political link between the centre and the remoter parts of the Muslim empire became at times very weak—and indeed was sometimes broken. For reasons of space, it is not possible to deal, however briefly, with the whole field of Indo-Islamic architecture: so the ground to be covered here is that of Delhi itself and the three related areas of development in the Punjab, in Jaunpur, and in Bengal. Between these there are certain links, tenuous in the case of the last. Between Delhi and the other regions where Indo-Islamic building developed—Gujarat, Malwa, Bijapur, Bihar, and Golconda—the links are lighter still, and these must be treated in some separate essay.

The Muslim patron had to depend very largely (in early days, probably exclusively) on Hindu building craftsmen to carry out his projects. For this reason it is necessary to clarify the fundamental difference between the Hindu (or indigenous) and the Islamic approach to building. In the first place the Hindu builder was a craftsman in a strictly codified tradition. Not only was the building trade hereditary, with all the verbal tradition behind it which that implies, but in the *Silpa-Sastras* were codified rules governing every phase of the builder's work. By tradition these compilations were made in the eighth century from an even older verbal tradition; Islam, a comparatively young philosophy, strongly affected by the classical liberalism of the University of Alexandria and by the Arabian enthusiasm for scientific research, encouraged experiment and the use of new techniques. In the second place Hindu building had its origins in wooden structural forms, and even though mason's work was widely used by the second century B.C., traditions of carpentry still survived. Whether for this reason or for some metaphysical objection to the use of a form not at rest within itself, the Hindu builder was most averse to the use of the arch, while the arch and dome were the keynote of Islamic building. Early Muslim patrons went to extravagant lengths to achieve arched forms from the hands of workmen who were ignorant of the structural problems involved and unhappy in experiment. There were other deep differences. The contrast between the small dim individual worship cell of the Hindu temple and the large space necessary for community worship in the mosque; the Hindu conception of a building as a solid scaffold for the sculptural forms covering it, and the Muslim insistence on structural forms emphasised but not concealed by the decorative detail; the Hindu skill in plastic expression of natural (particularly human) forms, and the orthodox Muslim dislike of anything but conventionalised detail.

With so many differences of a fundamental sort between patrons and builders, it is not surprising that a satisfactory synthesis was slow in coming. When it was finally reached in the sixteenth century under the Emperor Akbar the Great, it was due less to natural evolution than to the personality of the prince himself. The political events that followed made the collapse of this synthesis inevitable; though politically and culturally no less disastrous for the sub-continent as a whole.

AT THE CENTRE

DATE	POLITICAL MOVEMENTS	ARCHITECTURAL CHARACTER
1200—1246	Establishment of Delhi Kingdom under Slave Kings.	Utilisation of existing temples for mosques, followed by tentative attempts at producing Islamic forms.
1290—1320	The Khalji dynasty.	Rapid development of technique (with foreign help?) and introduction of true arch form.
1320—1413	The Tughlak dynasty.	Greater building activity in later part of period but in plainer fashion than before for economic reasons.
1399	Timurid invasions and capture of Delhi.	Cessation and migration of craftsmen.
1414—1526	Sayyid and Lodi period: end of Delhi sultanate.	Restricted activity for economic reasons after Timurid invasions. Technical help from provinces.
1526—1540	Foundation of Moghul empire by Babur and Humayun.	Little building, as the main effort was directed to empire development.
1540—1555	Humayun in exile and government in hands of Afghan family of Sher Shah Suri.	Much building both at centre and outside. Advances in technique and increased use of fine materials.
1555—1605	Humayun's return and reign of Akbar the Great.	Great activity: Humayun's tomb sets standard for orthodox work, but greatest achievement is in synthesis of Hindu and Islamic forms.
1605—1658	Reigns of Jehangir and Shah Jehan.	Great technical skill and wealth allows unrestricted development with fine materials. Indo-Islamic 'Baroque.'
1658—1707	Reign of Aurangzeb. Campaigns in Deccan.	Decline of building: economic, personal and military reasons.
Post—1707	Later emperors losing prestige and power. Deposition of last king in 1857.	Almost complete decay. No vigorous patronage. The age of plaster.

IN THE PROVINCES

DATE	POLITICAL MOVEMENTS	ARCHITECTURAL CHARACTER
1150—1325	Punjab first as a province of the centre and later separate.	Strong links with Persia and Arabia introduce specifically Islamic elements such as dome and structural arch.
1320—1576	Bengal evolves as a separate province till absorbed by Akbar.	Distinctive regional style based on brick structure, with little influence from or on the rest of India.
1360—1480	Jaunpur breaks from centre and is independent until re-absorbed by Lodis.	Strong Firuzian influence from masons leaving Delhi after Timurid sack. Later an influence from Jaunpur when masons return to Delhi in Lodi period.
1775—1856	Kingdom of Oudh. Province of centre becoming independent. Capital at Lucknow.	Introduction of European motifs and a wealthy court leads to medley of styles. Fine materials little used and much work in plaster.

The historical setting.

A brief outline is essential of the historical background to the architectural developments during the period of Muslim rule. Perhaps this is best given in tabular form. The first appearance of Islam came with the Arab invasions of Sind in A.D. 710. The area became, in fact, a province of the Caliphs of Baghdad: but, because of the barrier of the Indian desert, this episode had little effect directly on the country. There was some cultural intercourse between Baghdad and the University of Taxila (on the border of the Punjab and North-West Frontier Province), but there is no apparent exchange of architectural influences—although this point would seem to call for the attention of archaeologists. The Muslim rule of India really begins with the arrival of the Ghaznavids from their homeland to the north-west of the Hindu Kush mountains. At first seasonal raiders, they eventually settled permanently in India, but virtually no trace remains of their actual buildings in the country. That they were not barbarians is proved by the great wooden doors from Ghazni which now stand in the Palace of Agra. The Ghaznavids ruled from Lahore, but their successors moved to Delhi which, with certain intervals, was to continue the seat of government for six hundred years. These early invading rulers were followed by the so-called Slave Kings, then Khaljis and Tughlaks. After the disasters of Timur's raids and the sack of Delhi by his armies, came the dynasties of Sayyids and Lodis, followed by the final phase, the Moghul Empire. The actual area under the control of these various dynasties varied. Under the leadership of ambitious governors provinces broke away from the centre in times of its weakness. In these dissident kingdoms, wherever the local grandee was rich and strong enough to act as a patron of building, local variations of the architectural style of the centre was evolved. These provincial centres were re-absorbed under the Delhi government by the Moghuls, and it was Akbar's achievement to bring the country finally under one control again. Extravagant and unwise rulers followed his reign and the Moghul power in India finally petered out in a series of feeble puppet emperors with little character and no creative force.

The early period.

After the first natural impulse of breaking of images iconoclasm, during which the Muslim invaders destroyed Hindu temples and public buildings, a more constructive period followed. As soon as the Ghaznavids and their successors made a movement to settle in India, the building of mosques became the first necessity. The process was simple: temples were dismantled and their stones re-arranged, with some skill, to form the elements of a mosque. Successive peoples have always used the buildings of their predecessors as stone quarries—but normally it is the deserted palace which provides stone for the poor man's house; the impulse is economic. In the case of the earliest Indian mosques, this can hardly have been a factor. They were built by conquerors in a land where masons were plentiful and highly skilled in their own tradition. The explanation made by some authorities—religious zeal—is not satisfactory. Perhaps there was still, at this comparatively late stage (two hundred years after the Ghaznavid invasions began) some feeling of insecurity—an uncertainty of tenure so to say—which made it seem hardly worth quarrying and cutting stone afresh for large buildings. This certainly can be the only explanation of the later fortress mosques of the Tughlaks. However, it is obvious that the mere re-arrangement of temple stonework did not satisfy the builders for long. In 1199, work began on a great screen in front of the liwan of the improvised mosque of Delhi (Masjid Quwwat-ul-Islam). The development of Islamic architecture in India had begun. 1

The conflict between Hindu and Muslim ideas appears at once. The screen was to consist of arches but the masons were ignorant of the structural methods involved and, it seems, their foreign lords could not instruct them beyond a description of the final effect to be obtained. In all these early Muslim buildings, up to the end of the thirteenth century, the arch shape was obtained by simply projecting successive courses of stone in corbel form, and then by cutting the underside of the projection so formed to the curve of an arch intrados. The weakness of this form is obvious, and of the eleven arches so built in Delhi, only four still stand. Attempts at dome building were even less successful. Small pseudo domes in the manner used in the pseudo arch just described, are common. But an attempt to use the system on a larger

scale in the tomb of Shams-ud-din Iltutmish[1] was unsuccessful. The tomb stands roofless, and it is generally assumed that the original dome has collapsed: the undamaged condition of the highly carved inner walls of the chamber and of the gravestone itself, suggests either that the dome was never in fact built or that a dome of wood and plaster, since perished, was used. The rich decoration of the walls of this tomb is somewhat different from the equally rich carving on the arches of the
2 near-by mosque screen. In the latter the inscribed quotations from the Quran were carried out by a Hindu craftsman with little or no knowledge of Kufic script, but full of a love for rich, three-dimensional
5 ornament. In the tomb of Iltutmish the carving, still covering every inch of surface, has become flatter and more two-dimensional, the inscriptions are more academic, and the forms which will reappear often at later periods have been introduced. It is as if a specifically Indo-Islamic form of decoration is here beginning to crystallize.

Also of this period is the tower built in 1200 by Qutb-ud-din Aibak as an accessory to the Masjid Quwwat-ul-Islam. The importance
3 of the Qutb Minar (as it is called) lies as much in its origins as in its after-effects. A tower whence Muslims may be called to prayer is an important feature of any mosque, and though the Qutb Minar is unique, its elements may be traced in later minars for three hundred years. The inspiration must have come from the brick towers of Persia, and near the site of the city of Ghazni still stands a tower with a similar stellate plan. The corbelled galleries at stages round the tower have closer affinities with the galleries of Egyptian minars; but once again much of the carved decoration seems to be in the Hindu, rather than Muslim tradition, underlining the fact that Hindu masons were employed on this fundamentally Islamic monument.

This first period is one of uncertainty and improvisation.
4 Except for the Qutb Minar and a tomb, Sultan Garhi, none of the existing buildings have any strong character. Structural problems are solved clumsily or not at all. The arch remains a scenic form only, and the transition between the square plan form and the circle for the dome springing is inexpertly handled.

The Slave dynasty was followed, after a short interregnum, by a period of amazing splendour. The Khalji dynasty ruled for forty years, and although existing buildings of this period are few, it is obvious that they are the remnants of a highly developed and vigorous school of building. The true arch formed of voussoirs had made a modest appearance in Delhi about 1280 in the tomb of Balban, one of the rulers in the interregnum. The means of its coming are not very clear, but it may well be linked with contemporary events in the Punjab, which will be discussed later. However, it was the Khaljis, and in particular the Sultan Ala-ud-din, who established the use of this type of construction. He built a gateway to the Quwwat-ul-Islam called the Alai Darwaza. To realise fully the importance of this work, it must be compared with the work near to it, built a hundred years before; and with the work of the Tughlaks who followed fifty years after. So much is new, and so much re-appears frequently until the end of the creative phase of Indo-Islamic building. The swift development is curious, and has been attributed to political happenings further west.[2] The Mongol invasions broke up the empire of the Seljuk Turks, and it may have been refugees from this collapse who brought high building accomplishment to Delhi. But contemporary influences in the Punjab suggest a link with that direction also.

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[1] Last of the Slave dynasty (1211–1236) who carried out enlargements of the Masjid Quwwat-ul-Islam, and whose tomb lies in the precincts of the mosque.

It was through the Punjab that Islamic influences had first entered India: Multan, in fact, had been under these influences from the Arab province of Sind, before the arrival of Mahmud of Ghazni. In this region, building stone is scarce, and the basic materials are fine brick and some timber. These were also the materials familiar to the Muslims of Persia and Arabia, and this may account for the more rapid progress made here, in architectural design, than in the areas where unfamiliar stone techniques were forced on the builders. Little remains in Lahore, but there is a series of brick tombs in Multan, built between 1262 and 1320, together with one earlier one, and these have not, I think, been given their due importance. They are of brick, faced with glazed tiles—a technique directly rooted in Persia. The true arch with radiating brick voussoirs was used in the tomb of Shah Baha-ul-Haq who died 8
in 1262, and perhaps even earlier in the tomb of Shah Yusuf Gardizi of about 1150. The arches in both are the familiar flattened or ' tudor ' type which appear in all north Indian work from the fourteenth century onwards. Thus the introduction of the true arch to the sub-

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[2] Percy Brown, *Indian Architecture* (*Islamic*), p.13.

continent appears to be earlier than hitherto suggested, and the link with more westerly countries is clearer. The covering of the rubble masonry of the Alai Darwaza with comparatively small slabs of red stone and white marble, carved with platteresque designs of a geometrical type, is not unlike the elaborate tile work found on the Multan tombs (particularly on that of Shah Yusuf), and is very unlike the earlier decoration on the tomb of Iltutmish. A further point of similarity between the Alai Darwaza and the Multan tombs is the use of rectangular framed panels of decoration which do not appear in earlier Delhi work. Other important features which appear in Delhi in the Khalji period are the true dome, and the method of securing thin facing stones to a rubble backing by laying, at intervals, courses set deep into the masonry to form supports from below. Both these were brought from the Punjab; the four later Multan tombs (from 1262 onwards) were all domed, and the technique of face-work (in tile, not stone) was fully understood.

The origins of the Tughlaks, who succeeded the Khaljis, lay in
the west. The founder of the dynasty, Ghyas-ud-Din, was a soldier of
Turkish descent; and this may explain certain new features which
appear in the buildings of this time. They have an affinity with works
9,10 of military engineering, and the characteristic inward slope of the outer
walls would seem to reflect an origin in earthen walls built for defence.
11 Ghyas-ud-Din's tomb stands, comparatively complete, on the edge of
the ruins of his city. It is the prototype of a series which reappears,
with developments and refinements, during the following three hundred
years. Certain features are clearly retained from the preceding period
—the use of stone and marble facing and the 'spear-head' ornament
fringing the lower side of the arch opening. Other features are new; the
battered walls and (significantly) the apparently illogical introduction
of the beam spanning the opening below the arch. It would seem that
the Hindu dislike of the arch had been met half way by a compromise:
certainly, as time goes on and the Hindu bracket form is introduced
below the beam to shorten the span of the lintel, the result is effective.
Yet it is possible that the matter may not be as simple as it seems.
Chughtai[3] illustrates a tomb at Bukhara, built in 902 A.D. which is
startling in its significance. Here are the battered walls, the beam within
the arch, the dome surmounting the square. It is possible that some far-reaching influence might be traced between the two buildings.

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During one of the subsequent Tughlak reigns, the centre of government was moved, by whim, away from Delhi which was left deserted. After the return, the Sultan Firuz Shah found the treasury drained by the folly of his predecessor, and a crippling lack of stone masons. But he was a passionate builder and, in spite of the difficulties, many remains of the work of his reign can still be seen all round the cities of Delhi. Forced by these factors, a new type of building was evolved. Rich decoration and fine masonry were very little used, and walls were built of rubble with a thick finish of plaster within and without and probably originally coloured. Dressed stonework was confined 12
almost entirely to points of emphasis such as doorways, while domes and vaults were built of a coarse mass-concrete; thin unshaped stones were laid roughly as voussoirs, and the interstices (often larger in area than the stones themselves) were filled with lime concrete. The stone used was a quartzite which, when chisel dressed, does not take fine carving, and any fine decorative detail was carried out in carved plaster. Also appearing at this time is what might be called ' stone-frame ' construction: this is the use of monolithic columns, beams, and capitals fitted and assembled in a way which clearly recalls the ancient Indian carpentry traditions (cf. the re-used stonework of the Masjid Quwwat-ul-Islam), but now using stone specially cut instead of the spoil from demolished temples. In this type of structure, the stone was dressed and left unplastered. Such a system was used for galleries and *chattris* (kiosks), and the roofing with domes of these square or octagonal buildings produced some complicated and not unattractive pieces of stone ' joinery.' This type of work re-occurs with variations up to the reign
of Akbar. 13,14

Jaunpur and Bengal.

During the Tughlak period, the regions of Jaunpur and Bengal broke away from the rule of Delhi and became independent kingdoms: the former during the incompetent rule of Muhammad Tughlak (about 1340), and the latter in 1394 shortly before the sack of Delhi by Timur. Although most of the building work in these provinces was carried out rather later, it seems best to discuss them here, for both were influenced

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[3] Chughtai : Plate 12.

in some degree by the centre and in both places appear features which are relevant to later work in Delhi. In both regions, the earliest work was produced by the familiar method of demolishing temples and re-using the material: in Bengal it seems, in fact, questionable whether the Muslim builders at any time cut fresh stone from the quarries.

Partly because of its position along the centre of the Gangetic
Plain, and partly because a good building stone is available, the work in
Jaunpur (apart from certain distinctive features) is similar to that of
Delhi. Perhaps this was due to the arrival of builders and masons
driven from the ruined capital by the Mongol invaders. On the other
hand, the form of the arch used is less refined than in contemporary
work at the centre—as one would expect in a place where Islamic
influences had been felt for a shorter period. The battered walls, post-
and-lintel galleries, domed pinnacles (*guldastas*), and decorated arch
soffits are all clearly traceable to the work in the centre under Firuz
15 Shah. The fresh (and unique) characteristic is the great portal or pylon
forming the east front of the liwan in all the existing Jaunpur mosques.
The relationship between the liwan and the entrance, both demanding
emphasis, had obviously troubled Muslim builders in India from the
beginning, though the same trouble does not seem to have arisen in other
Muslim countries. Perhaps this is because the necessity to emphasise
the gate of the mosque is not felt so acutely in other countries where the
Muslim population is in the majority. In the Masjid Quwwat-ul-Islam
no real attempt at integration between the prayer-hall and the screen
was made. Later, as the liwan becomes traditionally marked by domes,
the problem of resolving the divided interest between dome and portal
becomes acute: perhaps the Masjid-i-Juma at Delhi is the most nearly
satisfactory solution. In Jaunpur, no solution was attempted, but the
problem rather emphasised by bringing the dome and the magnified
16 portal in close conjunction, so that they compete for attention. The
origin of such a wilful and characteristic form as these portals is obscure.
17 Outside Jaunpur, the only comparable example is the Begampuri
mosque near Delhi. Perhaps Percy Brown is right in suggesting the
simplest—that the form owes nothing to outside influences and is just
a spontaneous local development.[4] But the first kings of Jaunpur were
not Indians, but negroes; and it may not be too fantastic to see in the
pylon-like portals of these mosques in the Ganges plain, some dim

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[4] Percy Brown: *op. cit.*

memory of the pylons of Egypt. It is clear that the basic conception is comparable to that of the Western portals (the Gates of Heaven) of mediaeval French cathedrals. Whatever their origins, these Jaunpur portals are clearly the forerunners of the great Moghul gateways of which the Bulan Darwaza at Fatehpur Sikri is the most, and at the same time least, 36
successful.

The Jami Masjid at Jaunpur contains two chambers roofed by stone vaults on a very large scale. This is virtually unique, though it finds later echoes in the ingenious stone roofing of the palaces of Akbar: but work on such a scale will not be found again until the end of the sixteenth century.[5] It is clear that the builders of Jaunpur, though not highly skilled as craftsmen, had a lively imagination. The Atala 15
Masjid, the first of the series, introduced the great portal and the last, the Masjid-i-Juma introduced the equally unorthodox vaulted halls. 46

The kingdom of Bengal, far from Delhi and in a country where many rivers make communication difficult, developed a far more individual type of building than did Jaunpur. The fundamental influence of available material differed: in Bengal there was little stone, and the basic material was brick. It is a clear indication of the very slender links between this eastern province and the west, that although the materials in Bengal and the Punjab were the same, the architectural expressions evolved in the two places were entirely different. As we have seen, in the Punjab Persian influence was dominant: in Bengal local Hindu influences were more forceful. The nature of the country (full of slow rivers liable to floods and changes of course), and the materials (so easily re-used in later times and open to the attack of jungle vegetation), have caused the decay of much of the building at Gaur, the Muslim capital of Bengal. However, at Pandua, the capital between 1340 and 1430, the Adina Masjid is still in fair repair. As one would 18
expect, the use of bricks produced the large scale use of arches: the mosque, in fact, consists of nearly four hundred square bays, domed and arranged in arcades around a central courtyard. The bays are divided by pointed brick arches supporting the domes on angle corbels and springing from stone pillars. These pillars are squat and not of a proportion found elsewhere in India, and are probably of stone removed from demolished temples. In the centre of the west side of the court is

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[5] The Govind Dev temple at Mathura (U.P.) built in A.D. 1590. However, the roof of this is true voussoir vault, unlike that of the mosque at Jaunpur.

the main liwan. This seems to have been roofed by a single pointed brick vault, 34 feet wide, which has now fallen. The effect of this great arch, 50 feet high to its crown and flanked by arcaded wings, must have been curiously reminiscent of the Palace of Ctesiphon in Persia—an illustration of like structural methods and needs, independently producing like effects: the similarity can be nothing but fortuitous. Apart from the use of the pointed arch, and the general disposition of the plan elements, there is little in the Adina Masjid to suggest Islamic tradition. The decoration of the main mihrab (western niche) itself has very little
19 Islamic character. In an important building such as a mosque, the decoration was of carved stone; but in lesser buildings, carved brickwork was used. The bricks were carved after shaping, but before burning while the clay was soft; this technique produced the particularly rich, almost filigree character of Gaur decoration.

Although Delhi had very little influence in Bengal, one particular detail from Bengal travelled far to the west and became a characteristic of later Indo-Islamic work. The cornice or eaves line dropping to the corners of a building, was a form inherited by the Muslim builders
20 from their predecessors. The form was probably first evolved in wood and thatch, later translated to more permanent materials, and was a device to throw the heavily falling rains of Bengal away from the door opening in the centre of the wall towards the corners where it would cause least nuisance. After the kingdom of Bengal was absorbed in 1570 into the Moghul empire, this dropping eaves line was translated to the dry plains of North India. Here, its original purpose and structure forgotten, it became an elegant feature of the later Moghul palaces. Copied by the tributary Hindu princes of Rajputana for their own buildings, the form became firmly established in that part of India during the hard days of Aurangzeb's rule; and it is still used there in decorative
21 work today. This is an unusually clear example of the development of an ornamental detail from one of practical design.

Delhi: the middle period.

In spite of the invasion of Timur, the Delhi area continued to be the centre of Muslim rule in India. Between 1414 and 1540, there was an interim period during which building activity was on a smaller scale than before, although the period was formative and was the prelude to the short time of intense activity under Sher Shah the Afghan which led to the glories of the Moghul era. The most important buildings from the interim period are a number of tombs scattered mainly in the dry rolling country to the south of Delhi. These are of two types —square and octagonal—and there seems to be no clear reason for the adoption of one shape or the other. Sir John Marshall's suggestion that the octagonal tombs are for royalty only[6] seems contradicted by the most recent researches.[7] Although the treatment of the two types is dissimilar, there are features in both which are reminiscent of the work at Jaunpur. This suggests that masons from that city returned to Delhi after it had absorbed the smaller kingdom.

The square tombs followed the prototype of Ghyas-ud-Din's mausoleum: the slightly projecting centre bay holding the high portal, and the block crowned by a single dome. The outer walls however are 22
vertical, not battered. The masonry is rough, and was probably plastered; there is little relief of dressed stonework except at the entrances. The origins of the octagonal tombs are more obscure: small kiosks of this form are found in Firuzian work, and octagonal tombs (although without the surrounding arcades) were common in Persia before this period.[8] These Persian tombs have an echo in the tomb of Rukn-i-Alam at Multan, suggesting a possible line of influence to Delhi. The octagonal tombs in Delhi, always surrounded as they are by an 24
arcade, appear to be built mainly of dressed stonework: but the main walls are of plastered rubble (like those of the square series), and the arcade has protected the plaster from destruction. Firuzian details again appear; the guldastas, and the use of heavy merlons or *kanguras*. An impression of battering is given to the outline by inward-sloping buttresses at the angles: this suggests that the feature may have been discarded in the square tombs, not from the passing of tradition, but because of the awkwardness of fitting the rectangular surface decoration into such a form. Clearly the builders of Ghyas-ud-Din's tomb felt this difficulty, and it is even more noticeable in the pylons of the Jaunpur mosques, which contain rectangular niches.

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[6] CAMBRIDGE HISTORY OF INDIA, Vol. III; pp.592ff.

[7] Brigadier Humphry Bullock, *The Tombs of the later Sultanates of Delhi: The Octagonal Series.*

[8] Chughtai: Plate 23, etc.

It is said that in the tomb of Sikandar Shah Lodi (*c.* 1520), the dome becomes double, with an inner and outer shell (although there seems to be no definite evidence of this). This device, which is essential to the proportion of the interior cell when the dome is to have its fullest effect from without, reaches full development during the Moghul period, and will be discussed then. The culmination of these two tomb types comes, in the octagonal series, outside Delhi and its influence[9]; the masterpieces of the Moghuls are the culmination of the square tombs. It is interesting to speculate whether the use of the octagon by the usurper Sher Shah turned them from developing the potentially more interesting form.

During this interim period, one or two mosques were built which are more important as steps in the chain of developments than in
23 themselves. Here the Jaunpur influence is very strong. On the west walls, the central projection flanked by sharply tapering turrets crowned with guldastas is the Jaunpur solution to the problem of treating archi-
22,25 tecturally the blank wall imposed by liturgical needs. On the east façade, although the pylon has been discarded as too difficult to handle
25 satisfactorily, the treatment (in the Moth-ki-Masjid for example) of the projecting surfaces on each side of the main arch is very like that of the corresponding feature on the Jaunpur portals: a series of niches, one above the other, and each contained in a rectangular frame.

Although Babur founded the Moghul Empire in 1526, it was not really until forty years later that the great period of building began. The delay was largely due to the unsettled state of the country. Between 1540 and 1555, the government was in the hands of Sher Shah Sur and his sons, who drove the second Moghul emperor Humayun into Persian exile for fifteen years, an exile which was to have an effect on Indian building later. The first part of Sher Shah's work is at Sasaram (in Bihar) where, as already mentioned, he was responsible for the great series of octagonal tombs developed from the smaller ones of Delhi. Later, after removing to Delhi, he began building there. The Purana
26 Qila, Sher Shah's citadel, is little more than a stronghold, but it contains the Qila-i-Kuhna Masjid, built as the ruler's private mosque, which
28 carries a hint of later developments. The richness is greater and the craftsmanship used in the decoration is finer than has been seen before.

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[9] The tomb of Sher Shah at Sasaram (Bihar).

For the first time, apparently, inlays of coloured stone and marble are used to cover wall surfaces, and there is generally a new interest in fine materials, both here and in the surviving secular work of the time. But **29**
the plan is traditional, and the traditional features are there—the spear-head ornament on the soffit of the arch, and the tapering turrets at the angles. Only twenty years separate this building from the earliest work of Akbar at Agra, and the change in this short time is not easy to understand, so sweeping is it in its character. The small tomb of Sheikh Yusuf **27**
Qatl, near Delhi, if actually built at the time of the Sheikh's death, provides a link in the chain, although its stylistic origins are no less obscure.

The final phase.

During the hundred years between the start of Akbar's building activity (*c.* 1560) and the death of Shah Jehan, such a vast number of structures were built that any detailed analysis of them is impossible in so brief a review as this. I propose, therefore, to attempt a general survey of the influences at work, and the results of them, referring specifically only to one or two buildings as examples.

Akbar's greatest achievement was the unification, under a central rule, of the larger part of the Indian sub-continent. He was wise enough to see that a conciliation between the opposed doctrines of Hinduism and Islam was an essential for stable government, and his efforts may well have started from mainly political motives; but in the process, he clearly became genuinely interested in the study of comparative religions, and the production of a cultural synthesis. The policy is manifested in the buildings of his reign. The artistic temperament inherited from his grandfather, Babur, expressed itself in a passion for building: to gratify this, on a scale only possible for an autocrat, he collected a staff of craftsmen from all parts of the country. The rather clumsy and pedestrian local work of Delhi evidently had little appeal for Akbar: but in the kingdom of Gujarat, the patronage of Muslim rulers had encouraged an exceedingly elegant school of building evolved from the indigenous local timber building forms of that part of the country. In fact it seems that even before the absorption of the kingdom by the centre in 1572, masons from Gujarat had been working for the

emperor. Examples of domestic buildings of this period are rare, so
30 it is difficult to judge the background to the living quarters of Akbar's palace. It is plain, however, that the forms of decoration are less Islamic than Hindu (although there is still the avoidance, in sculpture, of the representation of animal forms), and that the construction used is largely based on wooden origins. The stone available in the north—a fine red sandstone—is easily quarried in long beams and thin slabs, and this
31 helped the development of a ' carpentry ' technique. The rough granite, hitherto used so extensively in Delhi, was now employed only for rough solid walling, covered always with thin slabs of stone (or later marble), instead of the earlier plaster. In the time of Akbar, marble was used
32,33 sparingly and externally only on points of particular emphasis; it is not until the time of his son Jehangir that inlay work, more suitable for interior decoration, began to appear on external surfaces. But although structure and ornament owe a great deal to workmen from other parts of the empire, the plan-forms, at least of the mosque and tomb, still retain the traditional Delhi characteristics with certain additions to be expected in a period of magnificence.

Tombs are still important buildings, and often formed part of pleasure grounds or colleges. Certain new features appear. Built early
39 in the reign of Akbar, Humayun's tomb seems to be influenced by his exile in Persia: this is not unlikely, as it was built under the supervision of his widow who had shared his exile. The use of the double dome, and the placing of the actual grave in a crypt under a false tomb in the main chamber above, are both features of the tomb of Timur at Samarkand (1404). There also, the neck of the dome is constricted, producing a slightly bulbous form: this, repeated in Humayun's tomb, develops into a fundamental characteristic of Indo-Islamic domes after this period, and is discussed again below. The link between Delhi and Samarkand is not obscure. The Moghuls were very aware of their Timurid ancestry, and Shah Jehan, on one occasion, sent a gift of 150,000 rupees in the form of jewellery, to the guardians of Timur's tomb.[10] The main block of Humayun's tomb, in spite of the complex plan and the corresponding elaboration of detail, is not very unlike the simple square tombs of earlier periods, although now raised on a large arcaded basement: and it is the model for the main series of tombs which follow.

[10] *Amal-il-Salih* by Muhammad Salih Kambo. Quoted by Chughtai.

Three early Moghul tombs stand apart from the main series, and it is difficult to guess their provenance. The tombs of Akbar himself, 40 Jehangir, and Itm-ud-Daula (Jehangir's father-in-law) consist, funda- 41 mentally, of a very large single-storey structure of no great height, with towers at the corners and a small pavilion in the centre. It is known that the central structure of Akbar's tomb was altered by his son; in Jehangir's tomb, there is no pavilion at all, though there are traces to suggest that it once existed. Thus it might be guessed that the type was only a freak of circumstances were it not for the third of the series. This is so obviously a complete composition that it leaves no doubt as to the existence of a type. There are, however, no later examples. The tomb of Itm-ud-Daula has another importance. It is the first occasion on which a building was entirely faced with marble, and it is also the first in which inlays of coloured marble in free (as opposed to geometric) forms are used on a large scale.[11] Thus it marks the transition between 42 the stone building of Akbar and what may be called the period of Indo-Islamic Baroque of Shah Jehan.

There are three factors which make the reign of Shah Jehan outstanding in the development of Indo-Islamic building. The emperor's own love of architecture, a settled country and full treasury, and the advance of building technique to a point where the achievement of the desired end was not impeded by a lack of technical skill. Apart from this, contacts with Europe were growing—although the effect of these were not entirely good and have been much exaggerated.[12] Shah Jehan himself is credited with the design of a number of buildings and even (though not very convincingly) with that of the Taj Mahal, the mausoleum of his empress. Making allowance for the adulation of courtiers, it 43 seems that he was at least a gifted amateur of architecture—in the same category, perhaps, as Lord Burlington in England. As might be expected in a court where the ruler himself was a gifted amateur of architecture, other amateurs found their place, and Chughtai names at least four of these. This may well be one reason for the particular character of many

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[11] Many of the motifs used in Itm-ud-Daula's tomb in the decoration are purely Persian in character, notably the frequent repetition of the wine cup and flask. The nobleman was a Persian.

[12] These influences were brought on two currents : trade (following the rise of modern commercialism in Europe) and Christian missionaries. Akbar had encouraged the latter, who in time exerted considerable political and cultural force. This continued in spite of efforts, under Shah Jehan, to control it.

buildings of this period, which leads me to use the term 'Baroque.' Up to this time, Indo-Islamic building appears to have been strictly constructive; that is to say, the design elements arose directly from the structure. In the Shah Jehan period, we often find that a particular effect has been aimed at, without consideration of the structural problems involved in achieving it. This is just what one would expect in buildings designed by amateurs with no technical knowledge and limitless wealth at command. An outstanding example of this is the
47 Throne Canopy in the Diwan-i-Khas in the Palace of Delhi—an immensely costly piece of vulgarity. A European influence seems apparent here in the acanthus-leaf decorations of the pillar capitals.[13] The foliated (or cusped) arches which originate perhaps in the spear-head fringes of earlier work, are very characteristic of palace work of the time; a detail without structural significance and which, in fact, leads sometimes to serious structural difficulties.

In contrast to such Baroque work, a number of buildings of the period are, so to speak, in the strictly classical tradition. These are generally the more important ones, suggesting that the weakness of the dilettante designers was understood, and that they were not allowed to
45 have a hand in projects of national importance. The Taj Mahal at Agra,
46 and the Masjid-i-Juma at Delhi are important works of this class. The Taj Mahal is fundamentally a successor of Humayun's mausoleum,
43 but there has been much refinement. The four minarets standing at the corners of the platform (originating it seems in the Itm-ud-Daula series) greatly strengthen the composition: and the two large buildings of red stone to the east and west of the white marble tomb are important elements in the colour composition of the whole. Here, and in the
46 Masjid-i-Juma, the dome is fully bulbous. The origins of this form, so unsuitable for stone construction, present some intriguing questions. In India, no examples appear to exist earlier than the college of Mahmud Gawan at Bidar (Deccan) of 1472; and this is an isolated example so plainly of Persian origin that it cannot be considered a part of the main stream of Indian building. In the north[14] the bulbous dome does not

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[13] It has been suggested that the Throne Canopy is largely later than Shah Jehan and was in fact partly imported from Europe. Although the design tastes more of Brighton Pavilion than of Delhi, it is no more 'un-Indian' than many other features in the Delhi Palace. European influences were clearly strong, but I do not feel that a European origin is possible.

[14] Marshall : CAMBRIDGE HISTORY OF INDIA : p.629. Mahmud Gawan was a Persian.

appear until the reign of Shah Jehan but such domes appear in paintings of an earlier date—for example in a copy of the *Akbar-nama* painted for the Emperor by Nar Singh. In a painting of Baghdad, executed about 1480 in Persia, a fully bulbous dome appears. It is not impossible that such a form started as a painter's exaggeration of the slightly constricted neck found in domes like that of Timur's tomb. Thence it became translated into wood and plaster buildings of which there were clearly a great many, though few have survived. The form was finally 53 adopted in permanent work by the amateurs of Shah Jehan's court. The tradition that one Ali Mardan Khan, a Persian nobleman, 'introduced' the bulbous form may lend weight to this theory: for the form was clearly known earlier, and we may understand by 'introduction' the adoption of the form in durable material.[15]

The Taj Mahal contains the finest examples of *pietra dura* work in India: the origins of this technique have been discussed and attempts have been made to prove its Italian origins.[16] But I believe that this is not correct, and that a steady line of development may be traced within India. However, the guardians of Jehangir's Tomb at Lahore, where *pietra dura* is used on a small scale (though of fine quality), preserve a tradition that Italians worked there. As the same family have provided guardians since the tomb's construction, this tradition cannot be ignored. *Pietra dura* was certainly practised in Florence, and as Italian craftsmen certainly worked for Shah Jehan, the truth may be that a technique evolved independently in India was brought to its final perfection by Italians. 49,50

It is a matter of taste whether Indo-Islamic building reached its climax with the restrained richness of Akbar's buildings, or in the elegant opulence of the Shah Jehan period: the work of a period is not to be gauged by a single building like the Taj Mahal, but by the average standard. But there is no doubt that, after Shah Jehan's death in 1658, a decline set in. I have suggested already that the quality of building in an autocratic state depends on the personality of the ruler, particularly where there is a fundamental difference of outlook between the government and people. It is clear then, that the deterioration of building under Aurangzeb (1658-1707) was largely due to influences in the court. But although Aurangzeb was a fanatical Muslim, with little of his family's artistic temperament, external influences probably worked through him. Shah Jehan's extravagance had nearly emptied the treasury—a good enough reason for the curtailment of building: then Aurangzeb spent a large part of his reign warring against the Marathas in Central India, and campaigning does not make for conditions that encourage building. The evidence supports the view that the decline of building in this period was due at least as much to economy and indifference as to active hostility in court circles.

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[15] Vincent Smith: pp.197ff.

[16] This theory is put forward in more detail in the author's *The Onion or the Pear*, published in APEX (April, 1951) by the Architectural Society, Delhi Polytechnic.

A small private mosque built in the Palace of Delhi for the emperor (the Moti Masjid) carried the baroque feeling of the previous
53 reign to its limits. Proportions are perversely bad, and all sense of structural honesty has been sacrificed to a desire to emphasise the plastic quality. The three domes, dropsical in their bulbousness, are far too big for the size of the building, and the gilded finials above them are caricatures of the original form. This exaggeration of form is even more pronounced in some of the late eighteenth century remains in the
55 Qudsia Bagh at Delhi—relics of a summer palace of a later emperor. These are of brick and plaster and have not even the merit of fine crafts-
56 manship. The Badshahi Masjid in Lahore (begun by Aurangzeb) is
46 nearly as large as the Masjid-i-Juma of Delhi, but nothing could illustrate better the change that had taken place. The former is impressive, competent, and dull—the very antithesis of the floating grace of the Delhi building—and exactly what one would expect of a building carried out under the orders of a puritanical soldier. At Aurangabad, his Deccan headquarters, is the tomb of his empress: modelled upon (though not, as sometimes stated, copied from) the Taj Mahal, it summarises the gap between competence and inspiration.

There is little Islamic building in Delhi of importance later than the beginning of the eighteenth century. One large, dull tomb of a
57 prince of Oudh, Safdar Jung; and a tiny, exquisite mosque near the
58 palace, the Soneri Masjid. The latter symbolises the change in the city's character, which from a seat of power and patronage on an imperial scale had become a centre for jewellery, perfumes, and pottery —the toys of a slowly decaying and powerless aristocracy.

In the north of the sub-continent, the interest shifts to Lucknow, the capital of the Kings of Oudh. The buildings of this phase may horrify by their lack of order and coherence, but they have a vulgar vigour not unlike that of the great English Elizabethan mansions. Indeed the parallel is a close one, for at both periods the builders loaded their structures with foreign motifs (those of the Italian Renaissance in both cases) imperfectly understood. The city contains a few fine stone tombs which, as might be expected, show less departure than other buildings from the established modes. Apart from these, the kingdom of Lucknow saw the beginning of the age of plasterwork, which still holds North India in its grip today. This too facile material allows the application of ornament without relation to structure, which certainly made more easy a cheerfully indiscriminate combination of European motifs and the extravagant forms evolved under the later Moghuls. **59,60**

By 1857, the story of Indo-Islamic building was ended: the life-force was gone and after the deposition of the last King of Delhi not even the shadow of a tradition was left. In places where Indo-Islamic culture survived—Lucknow and Rampur for example—patronage was devoted to preservation rather than to development. It will be interesting to observe future trends in Pakistan, where one may logically expect the story to continue.

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Short Bibliography

Sir Thomas Walker Arnold, *Painting in Islam,* Oxford 1928.
Claude Batley, *The Design Development of Indian Architecture,* London 1954.
Percy Brown, *Monuments of the Mughal Period,* in CAMBRIDGE HISTORY OF INDIA, volume 4, Cambridge 1937.
Percy Brown, *Indian Architecture* (*Islamic Period*), Bombay 1952.
Martin Briggs, *Architecture,* in *The Legacy of Islam,* edited by T. W. Arnold and Alfred Guillaume, Oxford 1931.
M. A. Chughtai, *Le Tadj Mahal d'Agra* (*Inde*), Brussels 1938.
J. Fergusson, *History of Indian and Eastern Architecture,* London 1910.
Sir John Marshall, *The Monuments of Muslim India,* in CAMBRIDGE HISTORY OF INDIA, volume 3, Cambridge 1928.
Vincent Smith, *History of Fine Art in India and Ceylon,* Second edition revised by H. de B. Codrington, Oxford 1930.

Short Glossary

Amalak. A fluted, globular decorative motif, probably originating in the natural form of a gourd or pumpkin.

Arcade. A series of arches supported on piers or columns. The arches may be open, as in a loggia, or closed and used simply as a decoration to a blank wall surface.

Batter. A wall which slopes inwards from the ground towards its top is said to be battered.

Chattri. A small kiosk or pavilion, usually crowning a roof or placed at the angles of a rectangular block.

Chajja. A widely projecting course of thin stones at the top of a building. It serves to protect the wall face and openings therein from the rays of the high tropical sun.

Corbel. A projecting stone or course of stones, which support a weight coming from above on the cantilever principle.

Console Bracket. A motif evolved in Europe and widely used during the Renaissance. It is a decorated form of the corbel and usually takes the form of a scroll.

Cusp. A pointed projecting decorative feature which breaks the line of an arch intrados. In Europe it is characteristic of Gothic work from the thirteenth century onwards, but is not found after the Renaissance except in imitative or revivalist work.

Finial. A decorative knob or moulding crowning some vertical member like a pinnacle or spire.

Guldasta. A pinnacle-like motif which appears in all Indo-Islamic work after the fourteenth century. It is usually used where two walls meet at an angle, apparently to soften the junction.

Intrados. The underside of an arch, or the plane of an arch which is at right angles to the vertical face.

Jali. A pierced screen, usually of stone or marble, used both for privacy and for protection against direct sunlight.

Jambs. The vertical members on each side of a door opening.

Kangura. Battlement-like cresting at the top of a wall. A feature of eastern fortifications from the Babylonian period, they are possibly the origin of the European mediaeval merlon.

Liwan. The main prayer hall of a mosque.

Masjid. Mosque (Urdu).

Mihrab. The niche in the wall of the liwan which points towards Mecca, and hence always in front of the congregation at prayer.

Minar. Tower. The diminutive 'minaret' is usually applied to the tower of a mosque.

Monolithic. Cut from a single stone.

Pietra dura. A decorative technique of inlaying coloured marbles and precious stones into a marble background in a free and flowing pattern.

Pilaster. A decorative feature in the form of a pillar which has no structural significance.

Platteresque. Decoration which is composed of a limited number of flat planes in recession, without any plastic character.

Plinth. The base of a building, usually indicated by a projecting or decorated line of masonry; it often corresponds with the floor level of the rooms inside.

Pylon. A massive structure pierced by a gateway standing at the entrance to a building or group of buildings.

Shikara. The tower over the sanctuary of a Hindu temple: usually sharply battered, the walls may be either straight or curved in profile depending on the part of the country.

Soffit. The underside of any horizontally projecting feature.

Spandrels. The triangular areas which occur when an arch is framed by a rectangular surround.

Stellate. Star shaped.

Stilted. An arch, the curve of which springs without a break from a vertical jamb is said to be stilted.

Trefoil. Having three foliated forms like those of a clover leaf.

Tympanum. The solid semicircular surface occurring below the intrados of an arch when a square-headed doorway is inserted in the archway.

Voussoirs. Wedge-shaped pieces of stone which form the structural members of a masonry arch.

Descriptive Notes to the Plates

With the exception of figures 15,16,18,19,20,29,59, *and* 60, *which are reproduced by courtesy of the Archaeological Survey of India, the photographs have been specially taken for this book. Figures* 22,23,24, *and* 47 *are by Mr. Vijay Khosla of Delhi*: *figure* 8 *is by Mr. Graeme Black*: *figures* 11,14,21,30,31,33,35,38,43,48–52, 54, *and* 56 *are by the author. The remainder are by Lieutenant-Colonel B. J. Bhatt of Simla.*

1—2. QUWWAT-UL-ISLAM MOSQUE—screen, near Delhi, *c.* 1199. Behind the left-hand arch is seen the colonnade built of re-used stonework from an earlier temple. The lack of relationship between the screen and the colonnade is very apparent. The ogee form of the arch is typical of this earlier period, and does not appear after the end of the thirteenth century. The rectangular frame around the arch which is so characteristic of Indo-Islamic building in all its periods is present even in this early example. The screen is built of reddish sandstone, used with little regard for uniformity of texture or colour.

3. QUTB MINAR, near Delhi, 1200. The top two storeys were added by Firuz Shah in the fourteenth century after damage by an earthquake. Marble is used as a facing with red and buff sandstone. This seems to mark the beginning of the tradition of using these stones for colour contrast in buildings. The balustrades round each balcony are modern and replace the original kanguras which had fallen into decay by the end of the nineteenth century. The plan of each storey is different: at the bottom, convex and triangular star-points alternate, while the second and third storeys are of convex and triangular star-points respectively. Human figures standing on top of the tower give a measure of the scale.

4. TOMB OF SULTAN GARHI, near Delhi, 1231. The form of this building is unique, consisting of a semi-buried vault (the roof of which appears in the right foreground of the illustration), surrounded by a wall with a mosque on the west side. The materials are probably all re-used from earlier non-Muslim buildings. The curiously slender and simple columns have led some authorities to see here an echo of the Greek Ionic order. This suggestion is given added force by the form of the capitals of the projecting central columns. But the similarity seems fortuitous; the capitals are clearly the familiar

four-bracket type used elsewhere in the building, with one bracket cut away. The simple polygonal columns, however, are unusual, but too fundamental in form to be quoted as evidence of a survival of Greek tradition. Quartzite and white marble.

5. TOMB OF ILTUTMISH—interior, near Delhi, 1235. The corbelled construction of the arches is clearly visible, and the same system is used for the semi-dome below the cross-arch on the left. The decoration includes such typically Islamic motifs as the geometric fret, and also the wheel-and-tassel ornament which is typically Hindu.
6. MOSQUE OF NIZAMUDDIN AULIA—north portal, near Delhi, *c.* 1320. The kanguras above the screen, the three-quarter pilaster beside the arch, and some other decorative detail have appeared in earlier work. But the skilled use of voussoirs, the pendentives below the dome, and the horseshoe form of the arch are new. This last detail, which becomes a key-note of Islamic buildings in countries further to the west, never became common in India, although the cusping of the arches found in the Moghul period produces a superficial resemblance. The spearhead ' fringe ' below the arch intrados is a new motif, subsequently much used in variously developed forms. Red sandstone, white marble and white (cream) stone.
7. ALAI DARWAZA—south side, near Delhi, *c.* 1310. This building shows a typical interplay of red stone and white marble used as facing materials. This was, in the seventeenth century, to lead to the development of *pietra dura* work. Apart from the horseshoe arch, a curious and unique trefoil arch form appears. This can be seen in silhouette beyond the main doorway in the foreground. This form re-appears later in distant places (cf. figure 19), but is never widely used, perhaps for structural reasons as it is obviously unsound. The external decoration of this gate consists of many inscriptions carved in stone or marble, and set between highly conventionalized platteresque borders.
8. TOMB OF BAHA-UL-HAQ—doorway, Multan. Although the brick structure of the tomb and its doorway have been encased in tile-work, the character of the arch over the entrance seems to indicate the use of voussoirs in some form. Multan building is all of brick, and to corbel even such a small arch in brick would be difficult, while the use of thin brick voussoirs would be easy enough. This

illustration also gives an idea of the rich beauty of Multan tile-work; the designs are carried out in various blues on white ground. The somewhat ' Chinois ' character of the niche on the right of the door is interesting.

9. KHIRKI MOSQUE—exterior, near Delhi, *c.* 1380. The contrast between this austere building and the earlier Khalji buildings, is striking. Mosques of this period are clearly forts or places of refuge as well as places of worship. This suggests that the Muslim rulers were still unsure of their power. The structure is of quartzite, varying in colour from dark grey to ochre, with a thick external coat of plaster. Dressed stone is used only round the portals, and for beams. The angle turrets (guldastas) flanking the doorway, clearly echo the Qutb Minar in miniature (cf. figure 3), and in other guldastas in this building, the stellate plan is found. The beam-and-bracket feature within the arch is to be noticed. This, and the general coarseness of detail, suggests that the craftsmen of the Khalji dynasty had in some way disappeared with their masters.

10. KHIRKI MOSQE—interior, *c.* 1375. Columns, bases and capitals are monolithic, supporting mass concrete domes, heavily plastered. Every compartment is domed, and the external appearance of these (in some mosques numbering nearly a hundred) is typical. The pendentives are often decorated with roundels of cut and coloured plaster. These sometimes also appear in the internal apex of the domes. The arches are slightly stilted, but not of horseshoe form.

11. TOMB OF GHYAS-UD-DIN TUGHLAK, Tughlakbad, *c.* 1325. Although certain Khalji features appear (e.g. the spearhead ' fringe ' and the panels of white marble set in red stone), the general character of the work is coarse and lacking elegance. New features are the remarkably sharp batter of the walls and the heavy stone finial crowning the dome. The former is later abandoned, but the finial eventually develops into the elegant lotus form characteristic of the Moghul period (cf. figures 35,41). This motif seems to have been borrowed from the amalak finial of the temple shikara. The tomb of Ghyas-ud-Din is faced with red sandstone (probably on a rubble wall below) and the dome is faced with white marble—the earliest example of the latter feature.

12. MOSQUE AND TOMB OF SHAH ALAM, near Delhi, *c.* 1351–88. The plan of this small mosque is more familiar than that

of such fortress-mosques as the Khirki (figure 9). It consists of a courtyard, with a three-domed liwan on the west side, and a gate on the east. The structure, however, is the same as that of the earlier type. The plaster roundels, which can be seen in the arch spandrels, carry calligraphic inscriptions. The finial of the small tomb in the foreground is a later addition, the original dome form being that of the mosque behind. The projecting chajja of both the tomb and the mosque has largely collapsed, although a little remains on the right-hand side of the tomb. Rubble masonry, with dressed stone door-jambs, and plaster internally and externally.

13. HAUZ KHAS, near Delhi, *c.* 1351–88. A palace and college built by Firuz Shah, whose tomb is in the centre of the illustration. The exaggerated Tughlak batter of the walls has been modified, but the use of rubble, mass concrete, and plaster continues. The two small kiosks in the background are among a number scattered in the grounds, and probably served as ‘ classrooms.’ All use stone ‘ carpentry ’ (cf. figure 14) and although the problem of fixing the chajjas firmly has not been solved (most have collapsed), the main structures have withstood time and earthquakes.

14. FIRUZ SHAH’S TOMB—railing detail, 1370(?). The position of this railing may be seen in figure 13. It is constructed either of coarse white marble or of fine granite, but the detail is plainly based on the technique of the wood-worker. The horizontal bars are fixed to the vertical posts by a sort of mortise-and-tenon joint, with a small supporting bracket cut below each rail. This railing, if contemporary with the tomb, appears to be unique. Similar examples, showing greater refinement in detail, stand in the Moghul palaces of Delhi and Agra.

15. ATALA MOSQUE—east gate, Jaunpur, 1408. Although the decorative motifs are derived from work round Delhi, the execution is maladroit and poor. The arch profile is clumsy and the spearhead ‘ fringe ’ is coarsely treated. On either side of the gate are simple colonnades of monolithic columns supporting stone beams on bracket capitals. There is little here to suggest the originality of conception which evolved the stone vaults in the Masjid-i-Juma.

16. ATALA MOSQUE—west wall of liwan, Jaunpur, 1408. Immediately behind the large dome is the back of the great portal; the uncomfortable relationship between the two needs no emphasis. The

elaborate moulding of the finials on the projecting part to the left appears to be a fresh feature, as is the boldly convex plinth. The dome finial still follows closely the amalak form, and has not yet developed into the lotus pattern.

17. BEGAMPURI MOSQUE, near Delhi, *c.* 1370. Here the multiple domes of the Tughlak mosques are combined with a large central portal leading to a domed space. The proportions of the arcade have an elegance which is lacking in earlier work, but the gate pylon itself is crude in proportion and detail. The central arch is stilted, but the apparent horseshoe form is an optical illusion, produced by the inward-sloping angle turrets. The materials, unlike those used at Jaunpur, are still rubble and plaster, with a minimum of dressed stone.

18. ADINA MOSQUE—central bay of liwan, Pandua (Bengal), *c.* 1358–89. Notice the brick structure above the line of the fallen vault, and the brickwork of the flanking arcades, standing on stone piers. The main vaulting would appear to have been parabolic in form, constructed in brick with, perhaps, stone ribs over the piers. Few of the decorative motifs, except the inscriptions and geometric tracery on the steps of the mihrab, have any Islamic character.

19. ADINA MOSQUE—detail of main mihrab, Pandua, *c.* 1358–89. The position of this is to be seen in figure 18. The complex carving round the outer trefoil arch and on the pilasters have no origins in Islamic motifs. The carving on the narrow vertical strip between pilaster and outer jamb on each side is strongly reminiscent of much earlier work of the Kushan period and is almost certainly re-used from some earlier building.

20. BARA SONA MOSQUE, Gaur (Bengal), 14th century. Although faced with stone, the character of this building is derived from its brick core: thick pillars, arches, and multiple domes. The curved cornice, dropping from the centre towards the corners is clearly seen, but its line is very gentle here, compared with later developments. (cf. figure 21.)

21. BUILDINGS AT REWARI, Punjab, early 19th century. On the borders of Rajputana, these late pavilions of stucco over a brick core show the ultimate development of the Bengal cornice line seen in figure 20. Note the textural effect produced by a repetition of traditional lamp niche in the upper part of each wall face.

22. BARA GUMBAD AND MOSQUE, Delhi, 15th century. This tomb type developed from the earlier ones, exemplified by the tomb of Ghyas-ud-Din (figure 11). This example is more ornate than many, and red sandstone and black marble are used decoratively to contrast with the grey-yellow stone of the walls. The heavy bracket-supported beams over the doorways become a feature greatly elaborated later in the reign of Akbar. The angle turret of the mosque (visible to the left) still carries on an echo of the Qutb Minar, in its taper, its rings, and in the stellate form of its upper part. The lotus finial of the large dome is approaching its final form, which it eventually reaches in the Moghul period.

23. BARA GUMBAD MOSQUE—east side, Delhi, 15th century. The handling of the arches of this façade is so clumsy that it has been suggested that the mosque is older than the tomb to which it is attached: this is not impossible. The angle turrets on the west (figure 22) certainly appear to be Firuzian rather than Lodi in design; and the obvious repairs to the cornice of the central bay may have been carried out after the removal of some higher 'pylon' feature as found in the Begampuri mosque. After the building of the Gumbad itself, such a feature would obviously appear awkward. However, the elaborate plaster decoration of the façade may belong to the later period, for cut and polychrome plasterwork is a feature of Lodi buildings. Until now, however, this mosque has been assumed to be contemporary with the tombs around it and, as such, is included as one of the rare examples of a mosque of the Lodi period.

24. TOMB OF MUHAMMAD SHAH LODI, Delhi, *c.* 1440. An example of the other tomb type built during the Lodi period. The effect of battered walls is produced by the sloping buttresses at the angles. The introduction of smaller domed pavilions (or chattris) around the central dome marks the beginning of a tradition which continues until the end of the creative phase of Indo-Islamic building. The arcade still has something of the simple massiveness of the Firuzian period, but there is a new refinement of proportion and appropriate ornament.

25. MOTH-KI-MASJID—west side, Delhi, *c.* 1505. Skilful handling of the plane surfaces imposed by liturgy on the west walls of mosques. The treatment of the guldastas flanking the central bay should be

compared with that to be seen in figure 22. The mosque itself is raised on an arcaded basement and advantage is taken of this to provide some openings in the normally blank western wall. These, combined with the angle turrets, make this west wall more lively than is usually the case. Rubble masonry with dressed stone details and plasterwork.

26. PURANA QILA—postern gate, Delhi, *c.* 1545. The use of red stone and coloured marbles as a facing to quartzite rubble walls mark the revival, during the Lodi dynasty, of a tradition after the long period when coloured plaster took the place of richer materials. In its present form this gate seems uncomfortably tall for its width, and the crowning chattris seem too isolated. When the flanking bastions were complete, however, they would have supported the chattris better visually, and would have given a width and massiveness to the whole composition. Red and buff stone, white and blue-black marble, and small areas of glazed and coloured tiles are all used on this façade.

27. TOMB OF SHEIKH YUSUF QATL, near Delhi. The exact date of this tomb is unknown, but if it was built shortly after the Sheikh's death, this tomb is the forerunner of the most important work of Akbar's reign. The tile-like chajjas, the bracket-caps of red stone, the vigorous jalis—all these are typical of work at Fatehpur Sikri. The mosque which is partly visible to the left is much more typical of work contemporary with the Sheikh, but evidence on the site does not lead to the conclusion that the tomb was re-built at a later date. Red sandstone with white marble relief.

28. QILA-I-KUHNA MOSQUE—east front, Delhi, *c.* 1545. This is one of the somewhat rare examples of non-military buildings of Sher Shah's reign. It is in marked contrast with the austere buildings of the Lodi and Tughlak dynasties which preceded it, and appears to echo the splendour of the Khaljis. A comparison with figures 6 and 7 will show a number of similarities. The spearhead decoration of the arch intrados is the most obvious. Much use is also made of contrasts of colour in the stonework: blue-black and yellow marbles are used, as well as white. The geometrical character of the decoration is purely Islamic and, apart from the repeating brackets below the window and the lotus finial crowning the dome, the building and

its ornament are more orthodox than most earlier work and, indeed, than most subsequent work until the reign of Aurungzeb.

29. QILA-I-KUHNA MOSQUE—main mihrab, Delhi, *c.* 1545. The lavish use of fine materials is most noticeable, the whole mihrab being lined with various coloured marbles. The cut and painted plasterwork of the Lodi period has disappeared. The transition between the semi-dome and the rectangle below it is clumsy, and the two rosettes do not improve it. One has the impression that the mihrab was conceived in two dimensions and that the translation into solid form was not fully considered beforehand. This characteristic has not been found since the earliest days of the false arches (such as those of the Quwwat-ul-Islam), but it became increasingly common in work following the Sher Shah period.

30. JEHANGIR MAHAL, Lahore Fort, *c.* 1610. Although probably built after Akbar's death, the series of small houses (presumably for members of the court) in the Fort at Lahore must be typical upper-class dwellings of the period. A series of small rooms is built on two floors round a large double-height loggia. These small rooms look into the loggia from galleries, and outwards through projecting oriel windows. These are protected by pierced stone screens instead of glazing. Notice the interesting contrast between the highly carved stonework of the loggia, and the plain plastered walls of the flanking rooms. The pillars, with their elaborate bracket capitals supporting the heavy stone chajja, are reminiscent of Persepolitan work.

31. FATEHPUR SIKRI—inner palace, *c.* 1575. The stone 'island' in the tank in the foreground was either a summer throne, surrounded by fountains and protected by awnings, or a dancing platform. The low colonnades, with their rhythm of void and solid, and heavy chajja lines are curiously like some twentieth century work. The purpose of the tower in the background, which is known as the Panch Mahal (five-storeyed) is obscure. Although associated with the mystical numerical symbolism of Buddhism (because of Akbar's interest in that faith), it was more probably a device to catch the breezes on summer evenings. All the buildings are carried out in a dark red sandstone, which has a particularly fine vermilion colour when caught by a low morning or evening sun.

32. FATEHPUR SIKRI—detail of carving, *c.* 1575. In spite of the typically Islamic enrichment of surface by shallow geometric

carving, the fundamental lines are simple and unobscured. White marble is laid into the red stone as emphasis and relief. The proportions of the panels have a mathematical basis (based on the square), and the relationship of one panel to another has a similar basis.

33. FATEHPUR SIKRI—tomb of Sheikh Salim Chisti, *c.* 1575. The present white marble of the tomb is a later embellishment, but almost certainly reproduces the original sandstone work. The curious brackets may be compared with figure 35. The whole is a strange medley of Islamic motifs (pierced screens, arches, and chevronned pillars) and Hindu elements, such as the brackets and the wooden forms of the roof structure.

34. FATEHPUR SIKRI—Mahal-i-Khas, *c.* 1575. The dignity of this building—the main Throne Room of the palace—comes mainly from the large plain surfaces and the skilful contrast between them and the enriched parts. This dignity is often missing in later work, where richer materials are used. The small kiosk on the left was reputedly built for a Hindu astrologer attached to Akbar's court: this is the suggested reason for the curious struts between the pillars, which are elements derived from Jain temples. The Mahal-i-Khas is faced with red sandstone, like all the Fatehpur buildings, over a structural core of rubble or brick.

35. FATEHPUR SIKRI—from the Panch Mahal, *c.* 1575. This illustrates the diversity of roof forms which give the palace area its particular charm. The complete absence of 'bulbous' domes is noticeable. The gable roof to the right of the photograph is of solid stone, but is covered outside with glazed blue tiles, a few of which are still in place. This is the only example known to the writer of such a form, and may have been suggested by some Chinese painting. The small pavilion in the foreground was, traditionally, built for Akbar's Christian wife, Mariam.

36. FATEHPUR SIKRI—Bulan Darwaza, *c.* 1575. This great eastern portal of the palace mosque foreshadows the lavish use of colour and contrasting materials which is typical of the later Moghul buildings. Magnificent in itself, the gate is ill-related to the mosque behind and to its surroundings. Features of non-Muslim origin are much less noticeable in this work than in the majority of the work of Akbar's reign.

37. FATEHPUR SIKRI—'Turkish Sultana's House'—detail, *c.* 1575. This sandstone bas-relief has a curiously Chinese flavour, particularly in the clouds near the top border. It has been attributed to Chinese workmen, but was probably carved by a Persian, or based on Persian motifs: the art of that country being strongly influenced by imported Chinese fabrics.

38. AKBAR'S TOMB—detail, Sikandra, *c.* 1610. Compare this with figure 37. The same cloud form may be seen at the top left. This panel is in marble and, allowing for this, it is very tempting to attribute it to the same craftsman who carved at Fatehpur Sikri. The border seems to be by a different hand. Compare also figure 44.

39. HUMAYUN'S TOMB, Delhi, 1565. This has many of the faults of a prototype. The dome appears too low for its base; the chattris are ill-related to the main block; and the guldastas are so unsatisfactory that there is suspicion that they are later (and unfortunate) additions. The importance of the tomb is the shape of the dome, with its concave-necked base, and the use of white marble and red stone facing. The shape of the dome is related to that of the tomb of Timur at Samarkand, and is the forerunner of the more typical bulbous domes of the Moghul period.

40. AKBAR'S TOMB, Sikandra (nr. Agra), *c.* 1610. In spite of the difference in size, there is a similarity between this building and the one shown in figure 41. The actual tomb in both is in the central room of the lower storey, with a 'false' tomb above. In Akbar's tomb, this latter is within the roofless enclosure of white marble screens that crowns the building: traditionally, it was intended to build some sort of kiosk here. Although separated by only a few years, there is a marked contrast between the styles of decoration of the two buildings.

41. TOMB OF ITM-UD-DAULA, Agra, *c.* 1630. This should be compared with figure 40. Together these two tombs indicate a form which, for some reason, never developed or became widespread. In its complete facing of white marble inlaid with coloured stones, this tomb may be considered one of the ' parents ' of the Taj Mahal, the shape of which, however, bears a closer relationship with the series which began with the tomb of Ghyas-ud-Din Tughlak. The internal compartments of Itm-ud-Daula's tomb are remarkable for the well preserved paintings; but unlike those surviving in Fatehpur Sikri, which mostly have some literary content, these are more orthodox

and are based on stylised landscapes and plant forms in the Persian manner.

42. TOMB OF ITM-UD-DAULA—detail, Agra, *c.* 1630. Inlay of coloured marbles (mainly black and yellow) of this type covers most of the exterior of this tomb. Although much freer than anything seen up to this time, it still has a formality which differentiates it from later work, and therefore it cannot be considered the direct forerunner of *pietra dura.* (See note to figure 49.) The use of Persian motifs of wine-flask and cup are interesting because Itm-ud-Daula was of a Persian family. These motifs do not appear in earlier work.

43. TAJ MAHAL, Agra, *c.* 1635. Although efforts have been made to attribute the design of this building to an Italian designer, there is no documentary evidence to support the theory, nor are there any stylistic grounds for it. The legend may arise from the use of *pietra dura* decoration which, admittedly, has affinities with Italian work of the same kind. The scale of the decoration is skilfully reduced as it is used nearer to the eye: this may be seen in the photograph by comparing the scale used in the spandrels of the main arches of the portal, and that used in the spandrels of the actual doorways. The flowing forms used should be compared with those seen in figure 41.

44. TAJ MAHAL—detail, Agra, *c.* 1635. The naturalism of this carving should be compared with the conventionalized forms in figure 38. There is also a contrast between the delicate inlaid border and the cruder one to be seen in figure 42. The carving of the flowers suggests the European influences which were beginning to be felt during the reign of Shah Jehan.

45. TAJ MAHAL MOSQUE, Agra, *c.* 1635. One of the pair of red stone buildings which flank the marble-faced Taj Mahal, a colour contrast which adds much to the latter's beauty. The domes here are not bulbous (though this form is used elsewhere at this period), but of the necked type used on Humayun's Tomb. This, and the large undecorated surfaces of red stone, contrasts curiously with the flowing *pietra dura* decorations. It might almost be said that in these buildings is spanned the developments that took place between the periods of Akbar and Shah Jehan.

46. MASJID-I-JUMA—Friday Mosque, Delhi, 1644-58. Although the details and the general mass seen from the west are fine, the

group lacks the unity of earlier and smaller buildings. The relationship between the central dome and the eastern portal is particularly unhappy and is reminiscent of the conflict between parts found in the mosques of Jaunpur. The domes themselves, however, are perhaps the finest of any. There is an effective contrast between the thin stripes of red stone let into the white marble, and the stripes of white marble at the angles of the red minarets. The structure, as almost universal at this time, is of brick or stone, faced with a thin veneer of dressed red sandstone and marble.

47. DIWAN-I-KHAS—throne canopy, Delhi Fort, 17th century. The semi-circular arches, the console bracket at the right, and the acanthus-leaf ornament belong to Europe; the curved ' eaves ' to Bengal. The whole is clumsy and ill-conceived. The work's main interest is in the *pietra dura* panels on the wall behind, where coloured motifs are inlaid into a white marble ground. The motifs are certainly Italian and, from the appearance of the wall as a whole, have been fitted into a locally executed decorative scheme. The subjects of the foreign plaques include birds and, in one case, a human figure; this seems to be the only case of living forms being used in *pietra dura* in India and is sufficiently strong grounds for attributing these particular pieces to a foreign source.

48. DIWAN-I-KHAS—Amber palace, Jaipur (Rajputana), late 16th century. The windows of this Hall are pierced, like those of a gallery, in a forbidding wall sheer from the valley floor below. There is virtually nothing, stylistically, to indicate that this is part of the palace of a Hindu Prince rather than of a Moghul one; but the intimate, almost cosy, atmosphere—achieved by skilful scaling down of all the features—is more characteristic of a Hindu than of a Muslim court. The pillars are of white marble, but elsewhere the finish is of the famous polished plaster, compounded of marble dust and lime, for which Jaipur is still famous.

49. AKBAR'S TOMB—detail of gate, Sikandra, *c.* 1610. Built by Jehangir, this work seems to provide the link between earlier formal inlays of coloured marble, and the true *pietra dura* of the following reign. The large floral panel to the left of the door is unlike anything found earlier, and on analysis is seen to be a development of the purely geometrical panel immediately to its left. Buff stone, black marble, and white marble are used in the floral design. In the tym-

panum of the door and in the two spandrels above it, the freedom of design is carried further: the design of the latter, in fact, is the basis of that over the subsidiary arches of the Taj Mahal (figure 43).

50. JEHANGIR'S TOMB—detail, Lahore, *c.* 1625. Perhaps the earliest example of inscriptions inlayed into marble. This form of decoration is later very widely used. Although the work must almost certainly be indigenous, there are other inlaid plaques on the exterior of this building which might possibly be Italian. (See page 21.)

51. MAHAL-I-KHAS—palace, Agra Fort, 1635. The height of luxury is represented by these marble pillars, carved and inlaid with semi-precious stones. There is a restraint, however, which saves the work from the vulgarity of the Delhi Throne Canopy. But the curiously inexpert handling of stonework can be seen in the wall at the lower left; also to be noticed is the careless junction between stone and marble immediately above the angle formed by the carved screen and the wall. Such things are at odds with the skilled carving and inlay, and suggest that emphasis was laid more on the decoration than on the fabric of the building.

52. SHISH MAHAL—Palace of Mirrors, Lahore Fort. An interior, probably dating from two periods. The pierced marble screen and the inlaid dadoes belong to Shah Jehan's period. The elaborately modelled and gilded stucco above, inlaid with mirrors, is more typical of later work. The Sikh ruler, Ranjit Singh, carried out many alterations to Moghul buildings in Lahore during the late eighteenth and early nineteenth centuries. The marble screen to the left is an excellent example, with its thick bars running through the honeycomb tracery, and the open panels which were originally fitted with small hangings to screen them when necessary.

53. DIWAN-I-KHAS AND PEARL MOSQUE, Delhi, 17th century. The arch form used here has again become scenic only, as when it made its original appearance in India in the twelfth century. There is no sign of voussoirs, and the cusped marble intrados must be suspended from a structural arch concealed behind the marble facing. The acanthus-leaf form on the base and caps of the piers are foreign elements. The domes of the Pearl Mosque behind are grotesque, with their voluted surfaces and disproportionate finials: this mosque was built for the Emperor Aurangzeb, and typifies the decadence of building in his period.

54. SHALAMAR GARDEN, Lahore, 17th century. Outside Kashmir, this is the only one of many Moghul gardens which survives in its original form. Used as summer resorts, all these gardens were centred round great ornamental tanks or pools, containing many variously shaped water jets. The buildings within the gardens were little more than summerhouses—like the one seen in the illustration—and built of wood and plaster. The stone beds of the water channels were often carved to produce patterns in the running water, and to increase its sound: such carving may be seen in the bottom left corner of the illustration.

55. QUDSIA GARDEN—Gateway, Delhi, 18th century. This ruined garden of a now-vanished summer palace is typical of the decay of taste brought about by the scenic attitude towards building, which started in the reign of Shah Jehan. The decay is complete when there is not even the merit of fine material or craftsmanship. This gateway is of brick and plaster, with feebly carved stone spandrels above the archway.

56. BADSHAHI MOSQUE, Lahore, 1675. There is little in this building to indicate its great size, and the detail is lifeless. The relationship between the portal and central dome is more harmonious than that at Delhi, but the domes have little relationship to the mass of the liwan below them and the composition would not suffer if they were removed. The building is faced with red sandstone, all carried some three hundred miles from the quarries of Agra. Earlier building in Lahore had made great use of the vernacular of bricks, faced with glazed and coloured tiles.

57. TOMB OF SAFDAR JUNG, Delhi, 1750. This is the last of the series of great tombs, and although its proportions are mean and narrow, it incorporates features which may be traced very far back. Cusped arches, chattris, contrasting materials, and guldastas—all are present in a lifeless form. Nothing could demonstrate more clearly that details of form and ornament are unimportant in buildings when compared with skill in composing masses and handling materials according to their true nature.

58. SONERI MOSQUE, Delhi, 18th century. Now isolated, this mosque was once in the middle of the thick mass of buildings which formerly crowded the walls of the Red Fort in Delhi. The building is of a fine-grained buff sandstone, instead of the more usual red

stone; from this, perhaps, it came to be called the ' Golden ' mosque. The proportions are excellent and the domes, though bulbous, are not ridiculous like those of the Pearl Mosque (figure 53). The thin chajjas over the doors are out of character and may be later additions.

59. IMAMBARA, Lucknow, 18th century. A large hall built by a king of Oudh for famine-relief work. The building impresses by its size, but there is little fertility of imagination and the repeated motif of domed kiosks along the skyline are monotonous. However, the building is dignified compared with the wild incompetence of the work in the Kaisarbagh Palace and elsewhere in Lucknow.

60. KAISARBAGH PALACE—east gate, Lucknow, 1790. Here is the full horror of the impact of stucco and European Baroque upon Indo-Islamic building. Although most of the forms which appear here (except the semicircular arch) are basically traditional, the handling of them and the detailing are certainly not so. The chajja has shrunk to a pseudo-cornice, supported on console brackets: quasi-Corinthian pilasters are chevronned in the traditional manner; and Italianate turrets are crowned with bulbous domes. The whole has at least the vigour of bad manners which is more than can be said for the dreary plaster wastes of New Delhi.

61. SECRETARIAT MOSQUE—New Delhi, 1938. Plastered brickwork is here used with restraint, and although austere, this small building has dignity. The chief fault is a lack of scale, which is probably due to the architect's fear of over-elaboration. This fault must be counted as a virtue when compared with the preceding illustration.

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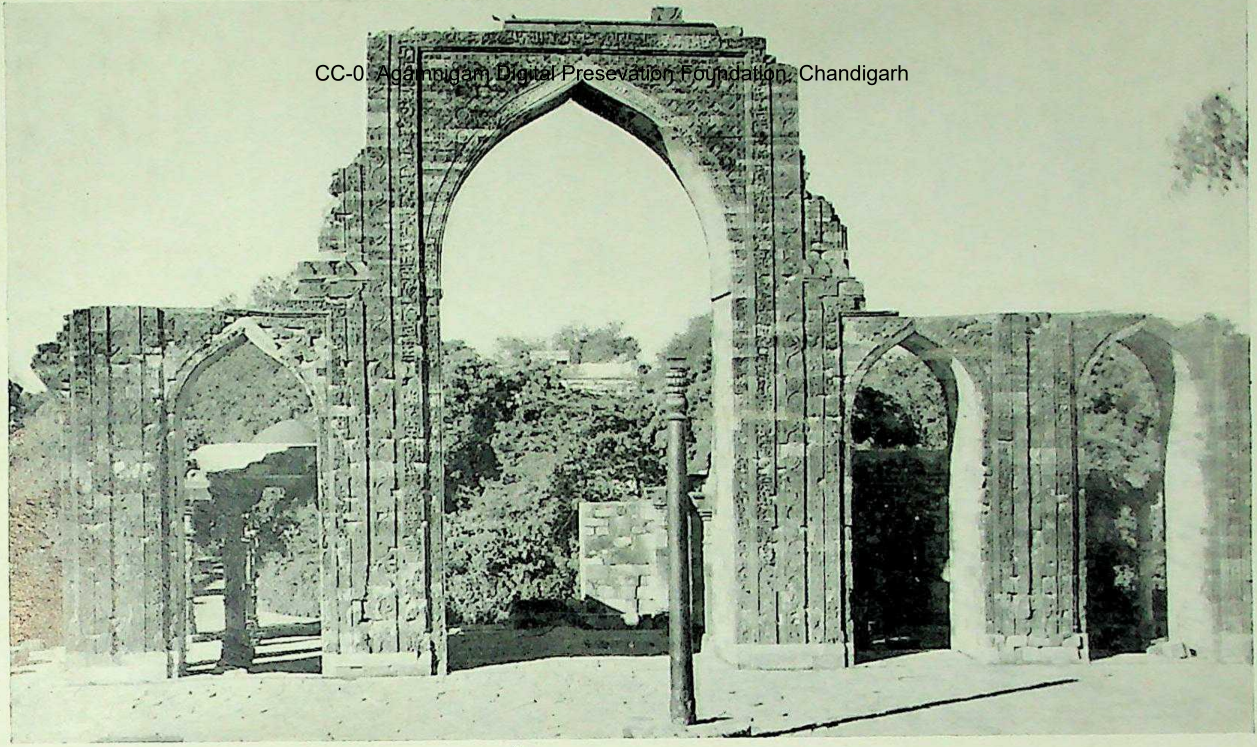
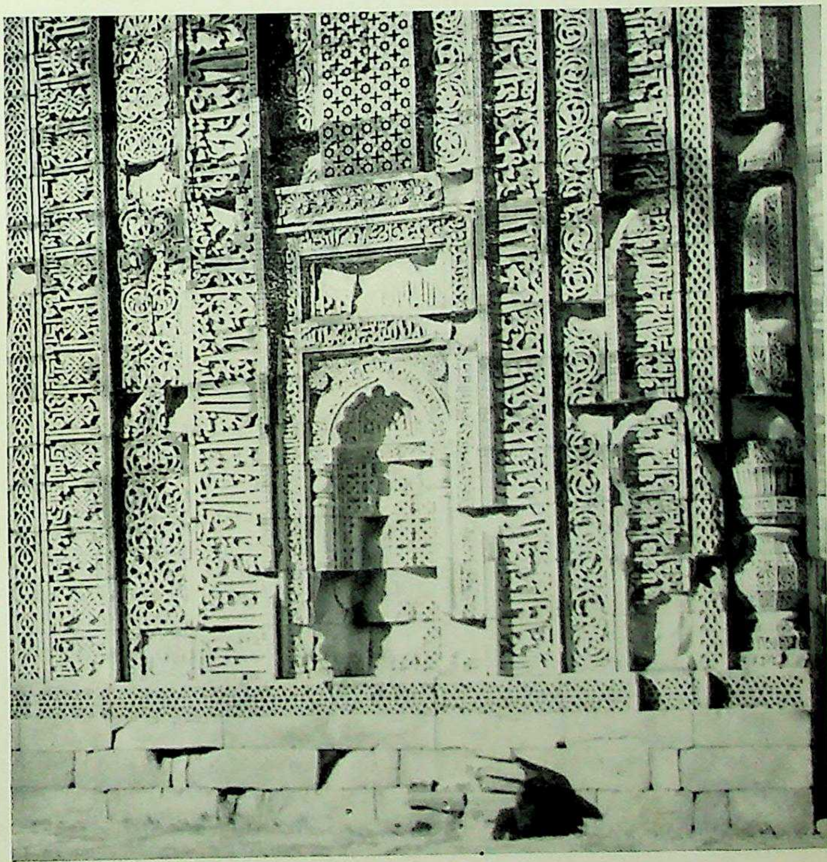
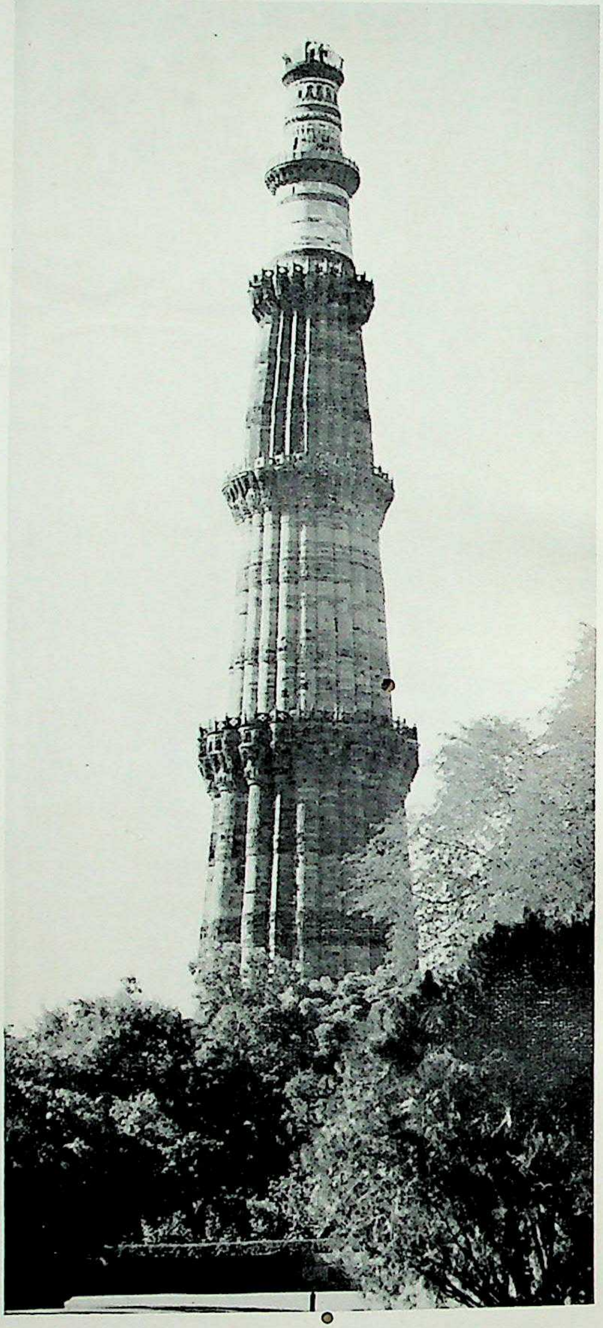


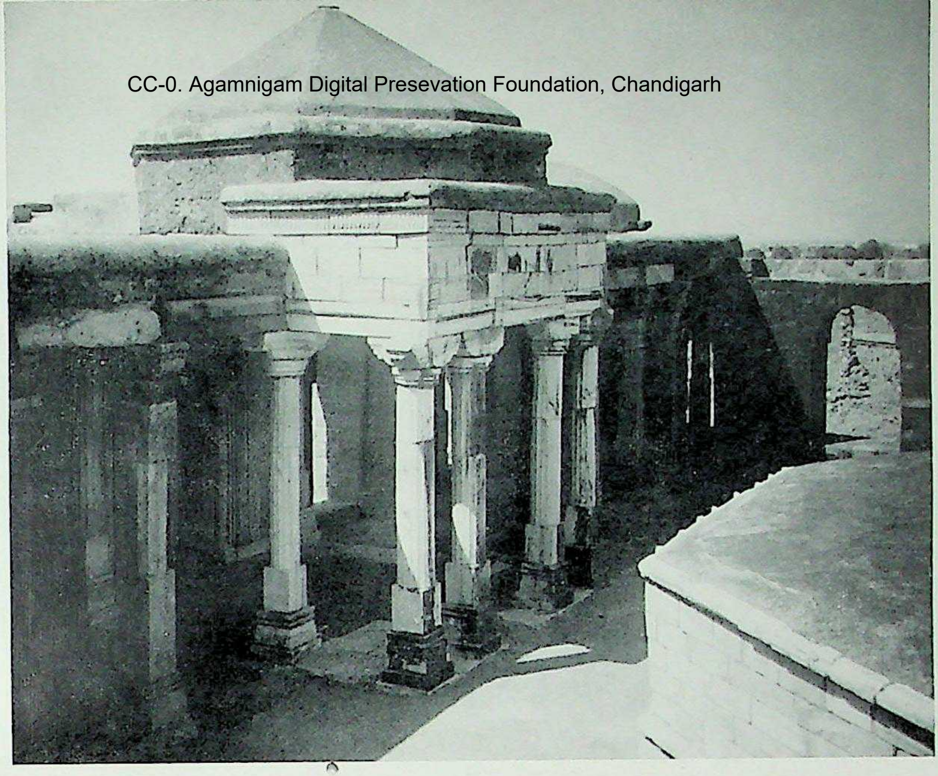
1. QUWWAT-UL-ISLAM MOSQUE — screen, near Delhi, *c.* 1199.



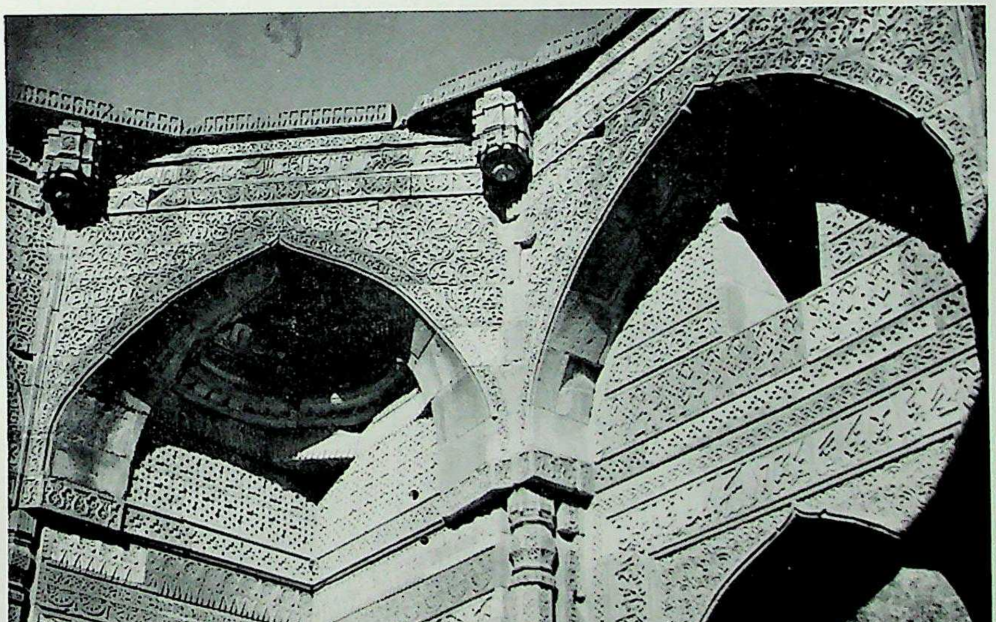
2. QUWWAT-UL-ISLAM MOSQUE — a detail.



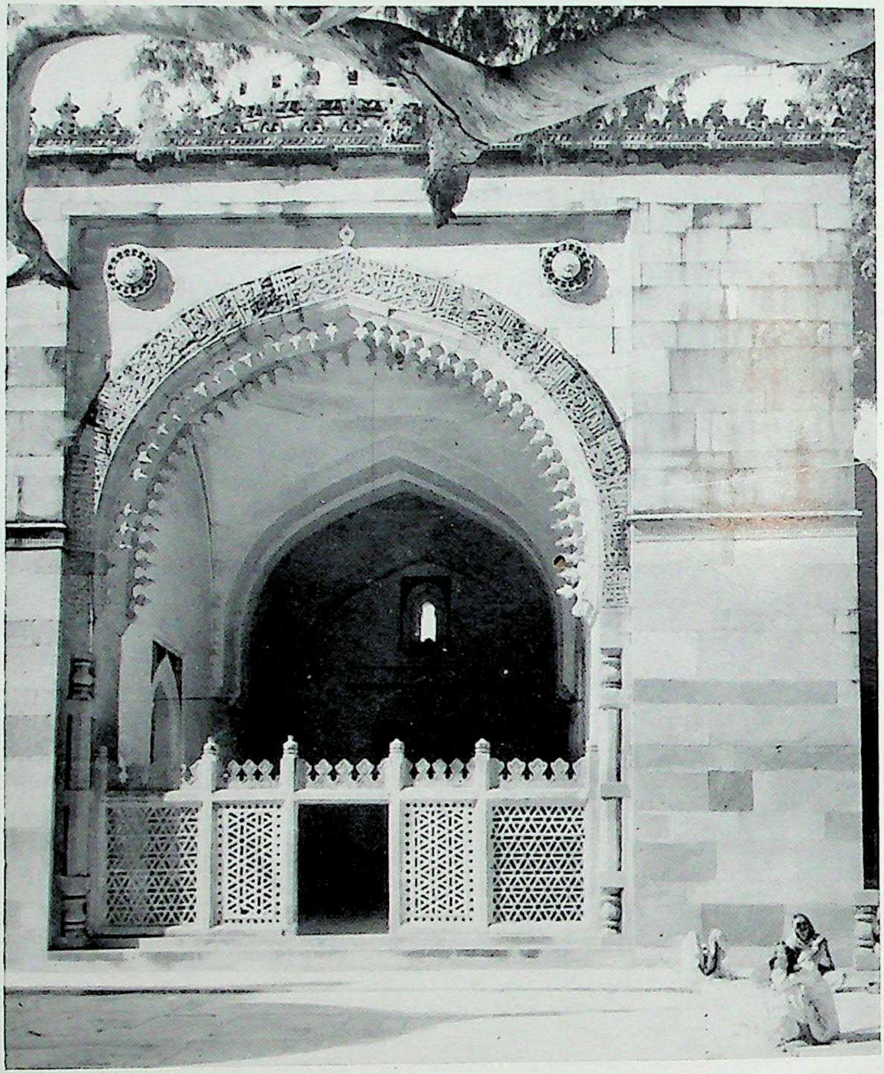
3. QUTB MINAR, near Delhi, 1200.



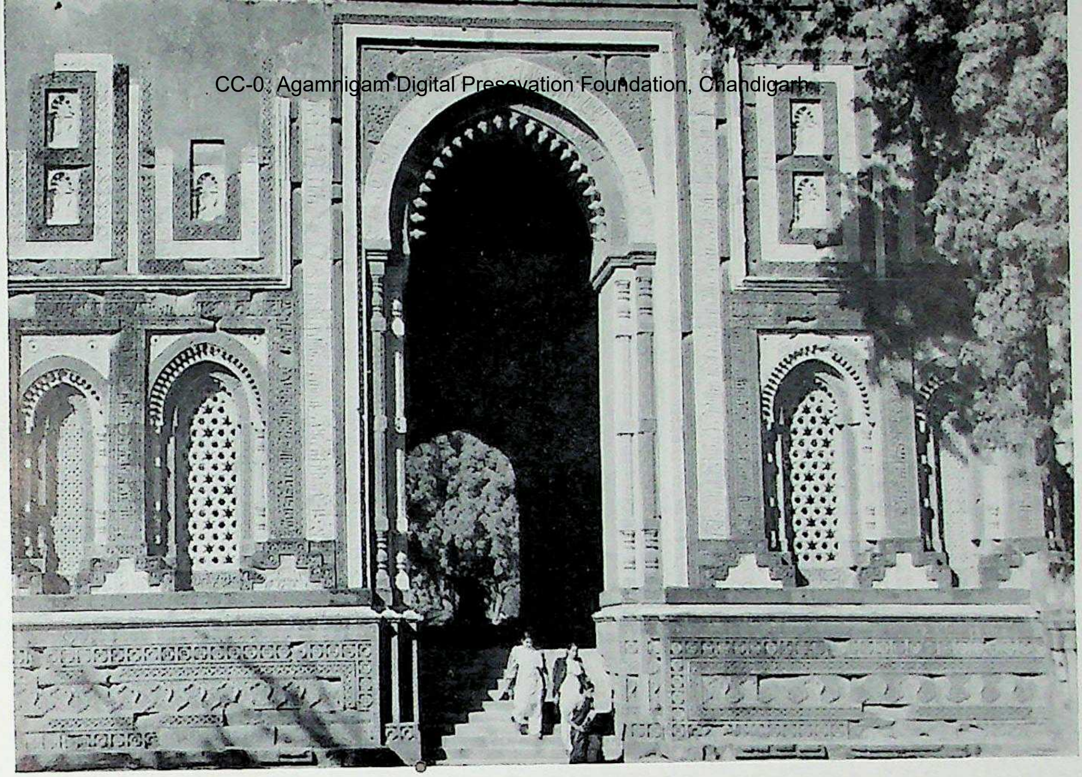
4. TOMB OF SULTAN GARHI, near Delhi, 1231.



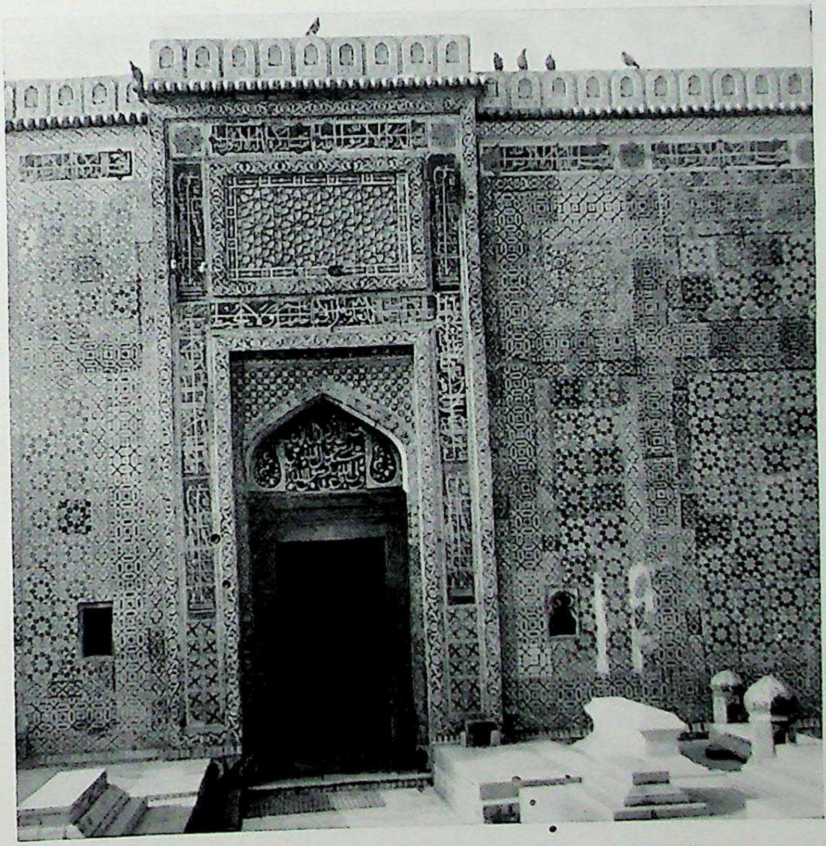
5. TOMB OF ILTUTMISH — interior, near Delhi, 1235.



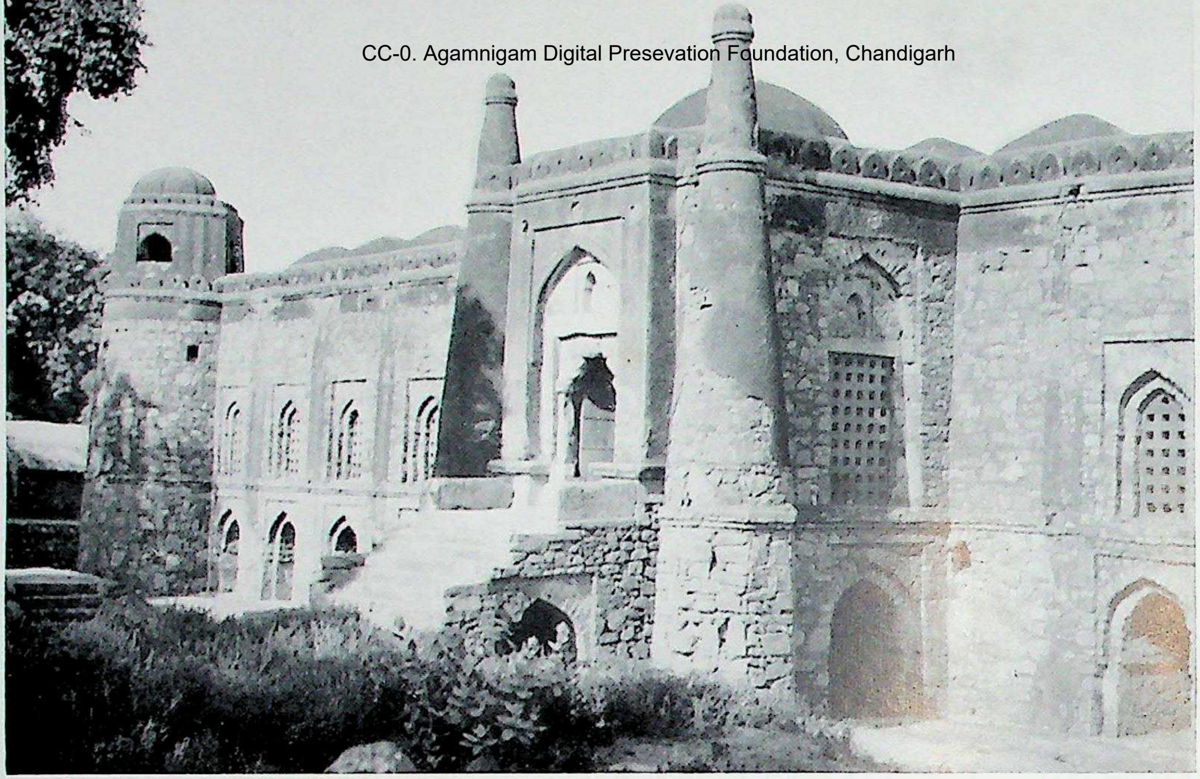
6. MOSQUE OF NIZAMUDDIN AULIA — north portal, near Delhi, *c.* 1320.



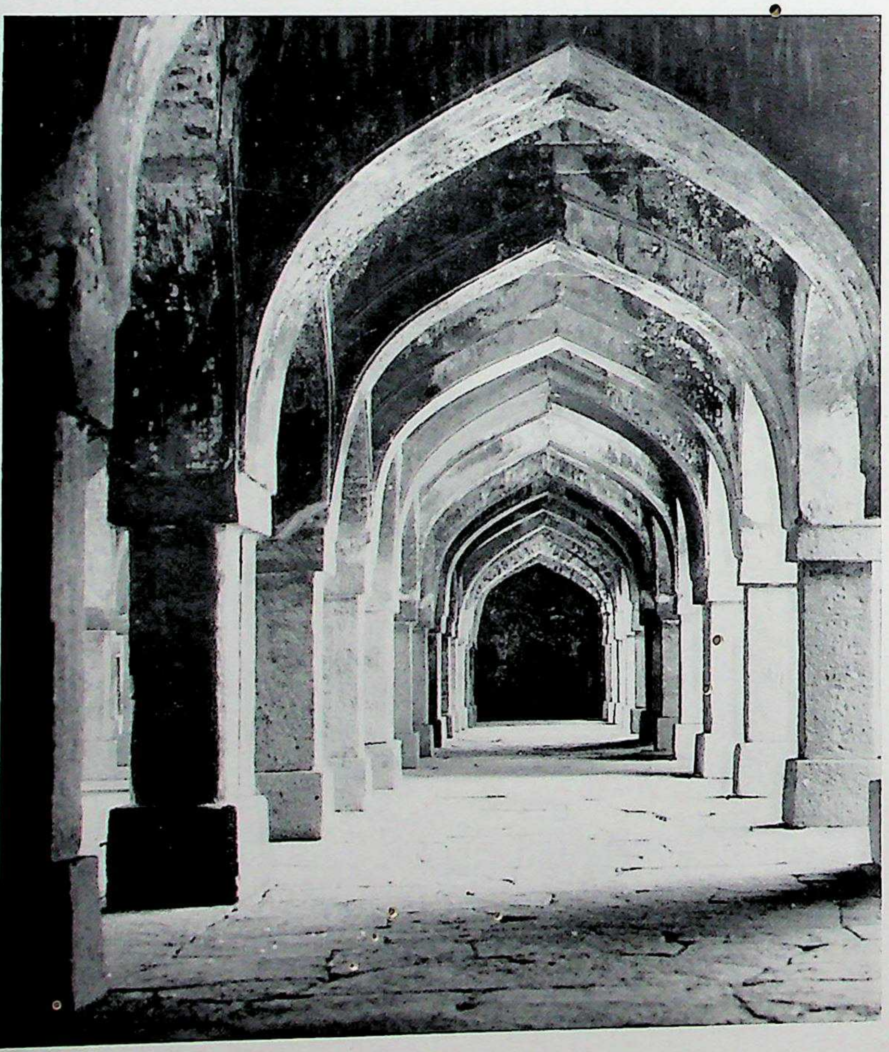
7. ALAI DARWAZA — south side, near Delhi, *c.* 1310.



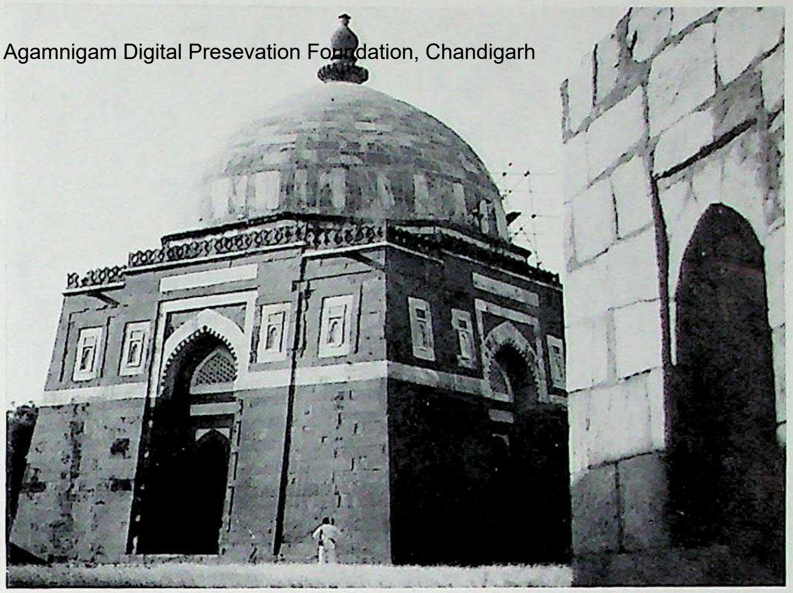
8. TOMB OF BAHA-UL-HAQ — doorway, Multan.



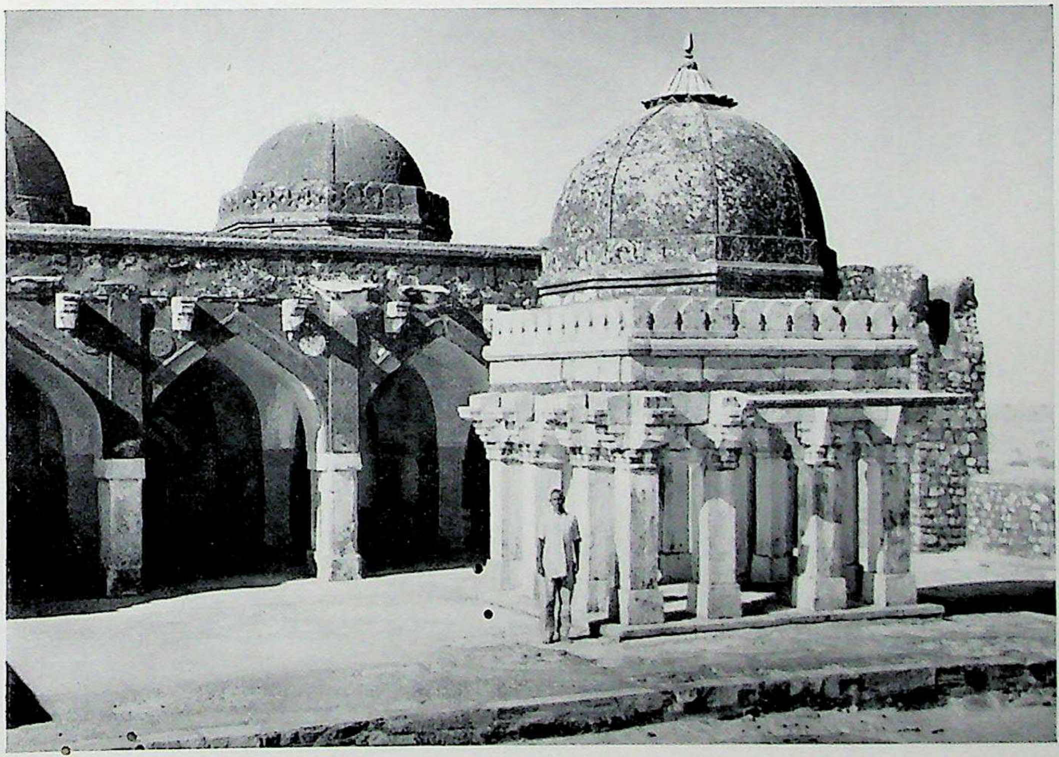
9. KHIRKI MOSQUE — exterior, near Delhi, *c.* 1380.



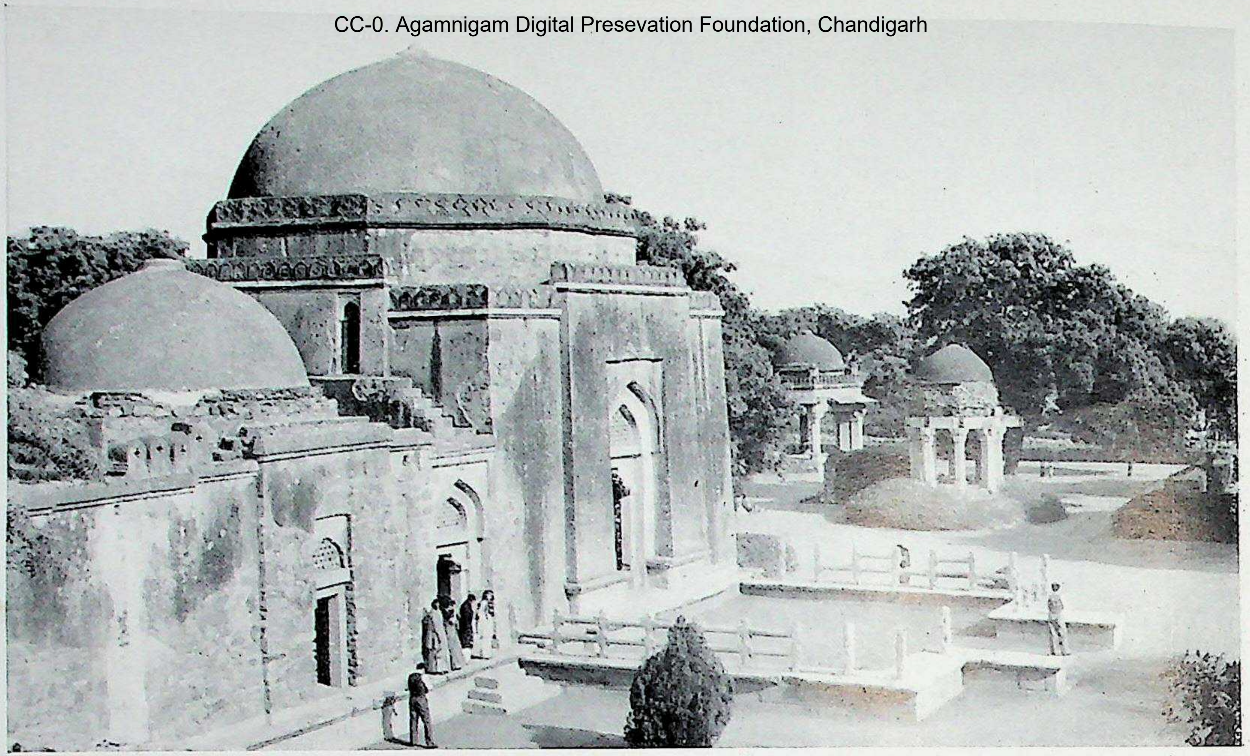
10. KHIRKI MOSQUE — interior, *c.* 1375.

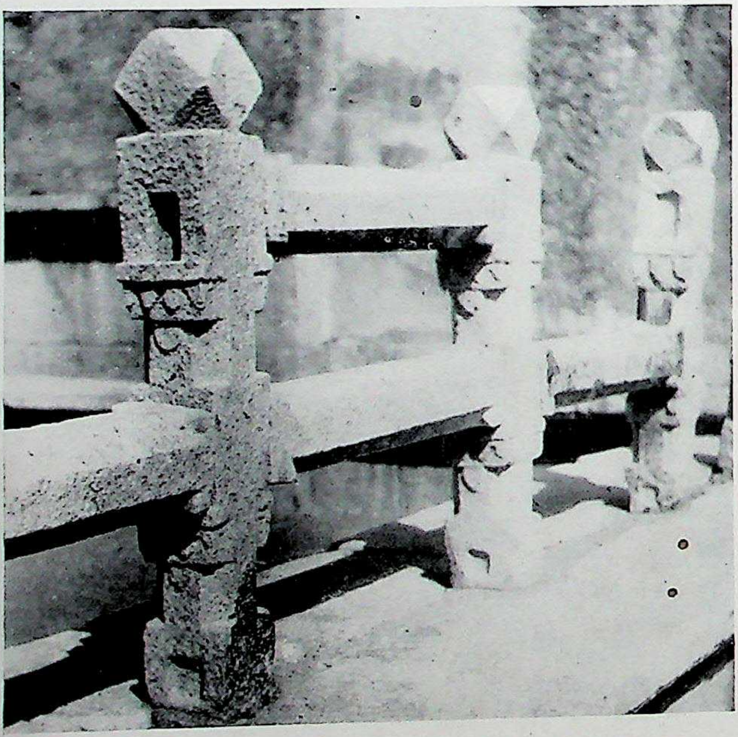


11. TOMB OF GHYAS-UD-DIN TUGHLAK, Tughlakbad, *c.* 1325.

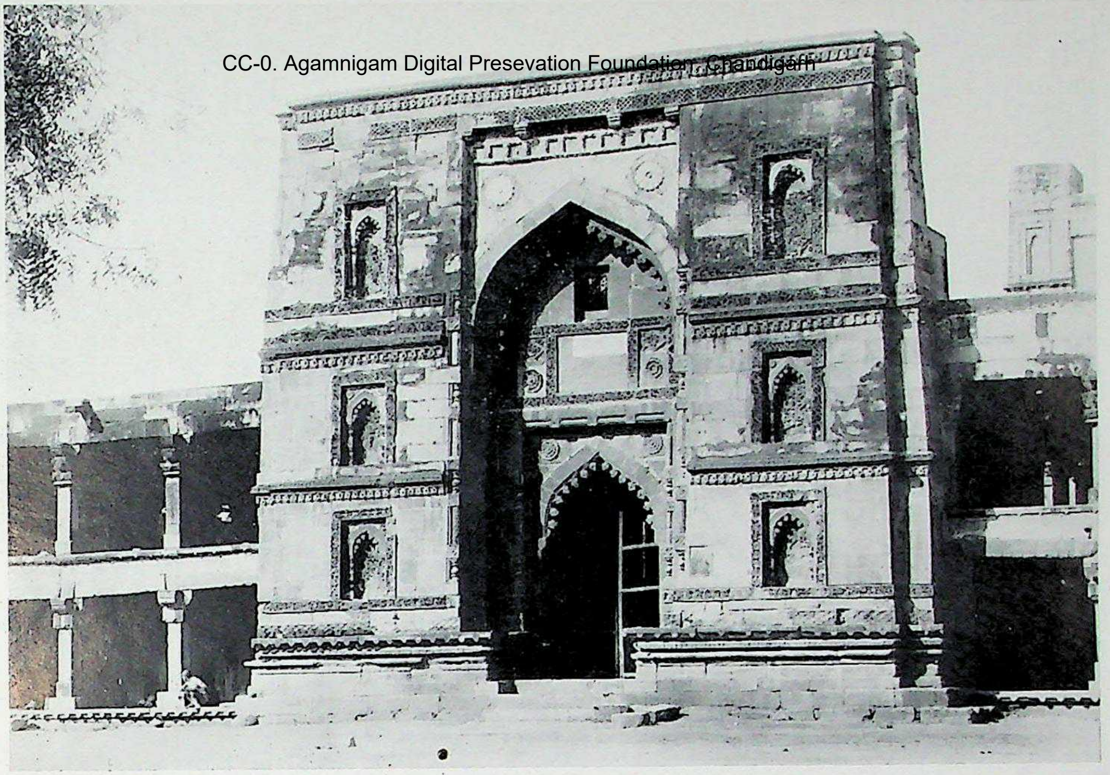


12. MOSQUE AND TOMB OF SHAH ALAM, near Delhi, *c.* 1351–88.

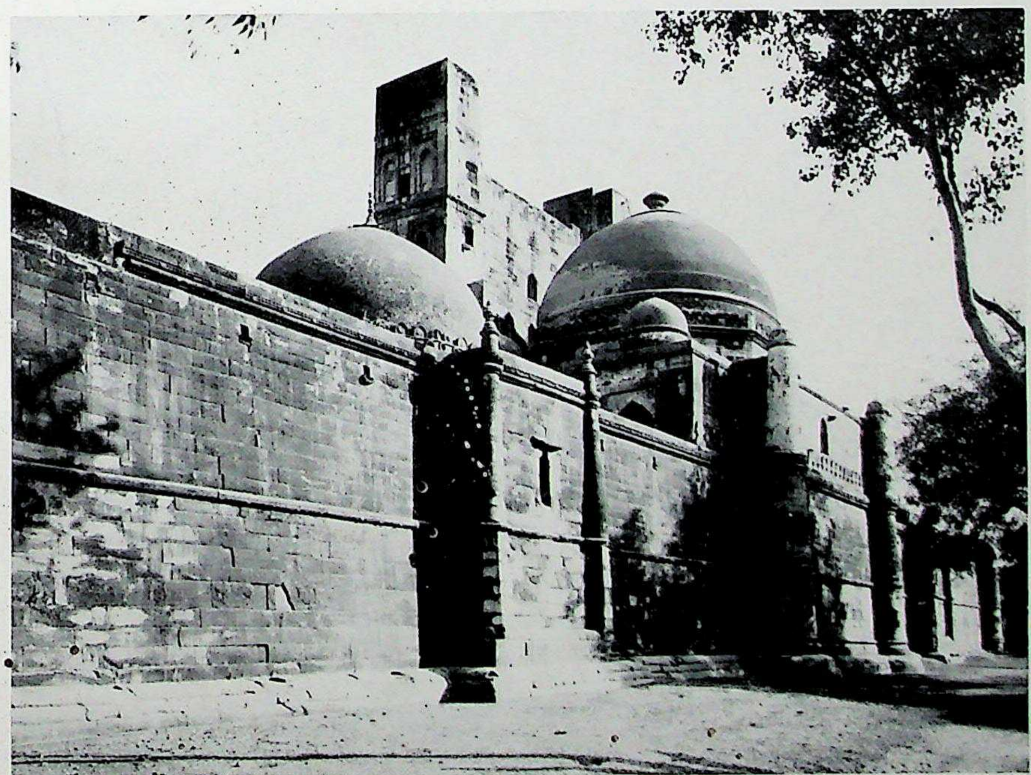




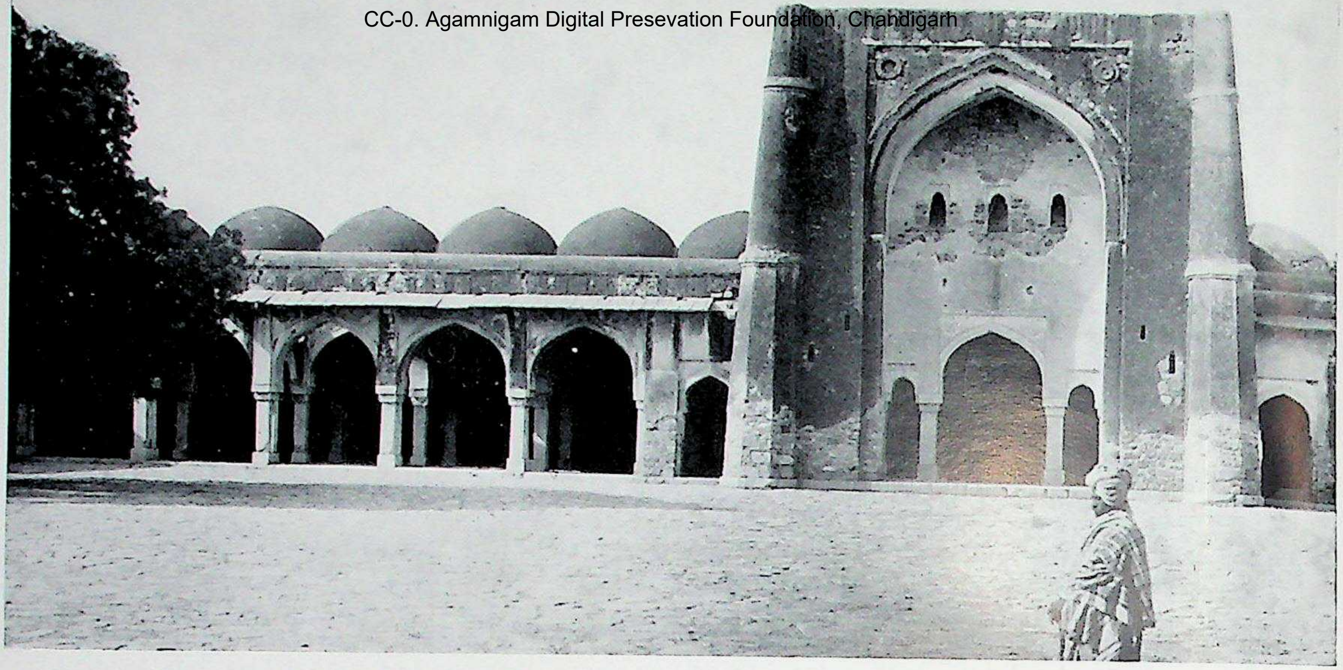
13—14. HAUZ KHAS, near Delhi, *c.* 1351–88, with railing detail from Firuz Shah's tomb, 1370(?).



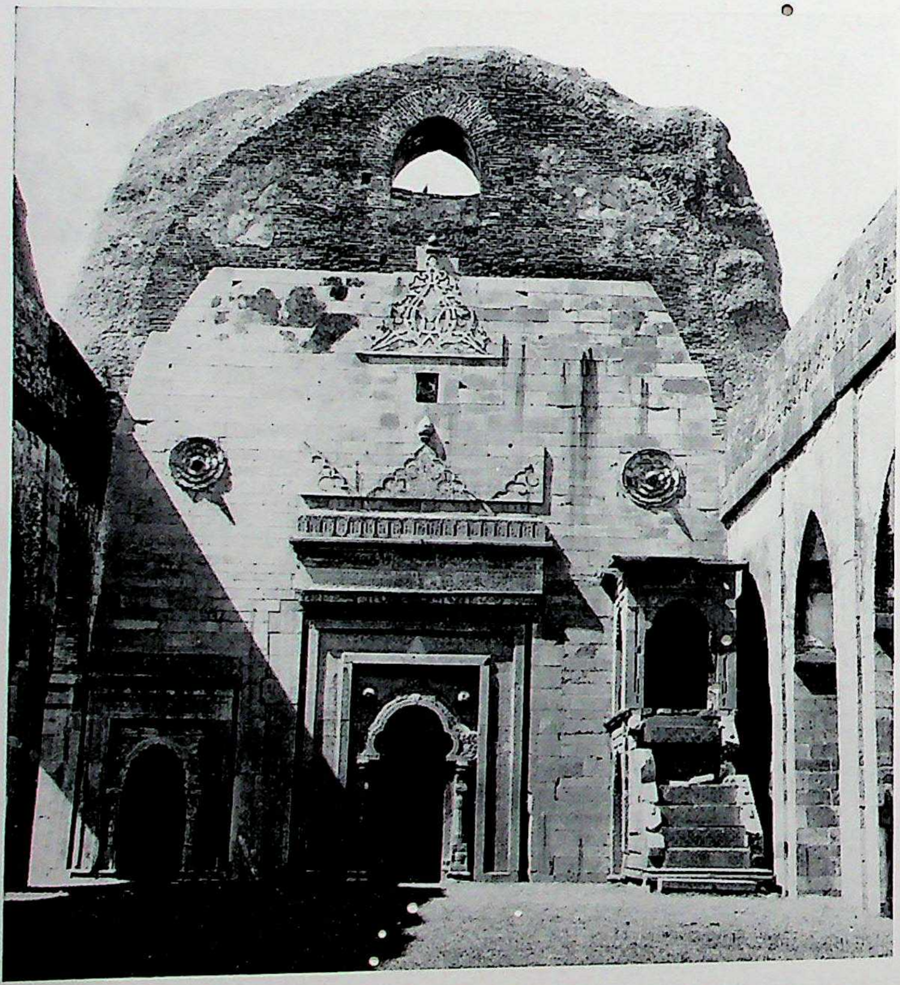
15. ATALA MOSQUE — east gate, Jaunpur, 1408.



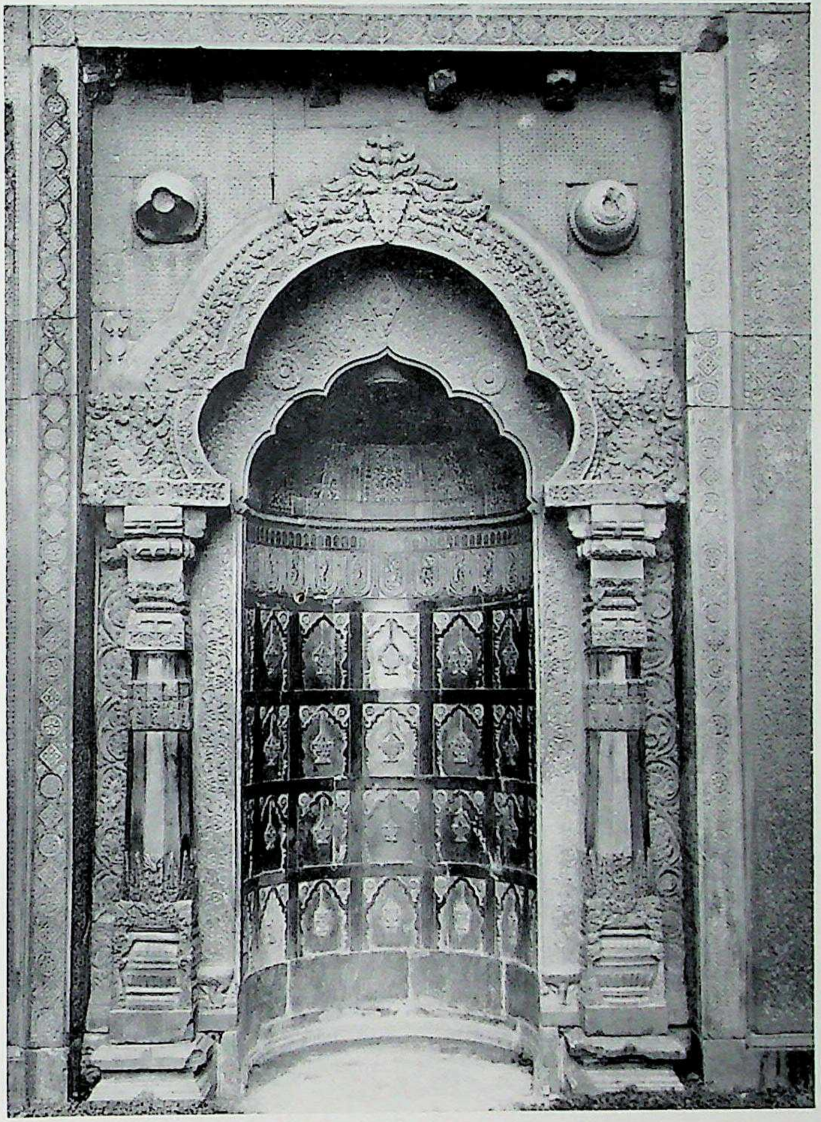
16. ATALA MOSQUE — west wall of liwan, Jaunpur, 1408.



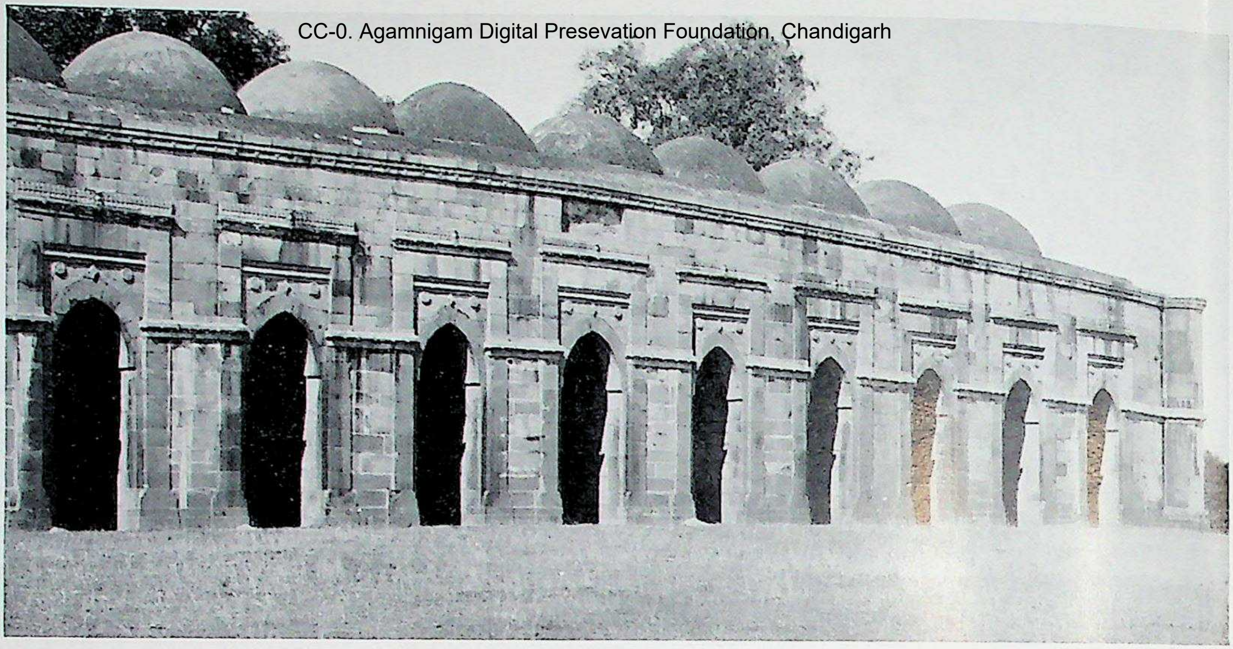
17. BEGAMPURI MOSQUE, near Delhi, *c.* 1370.



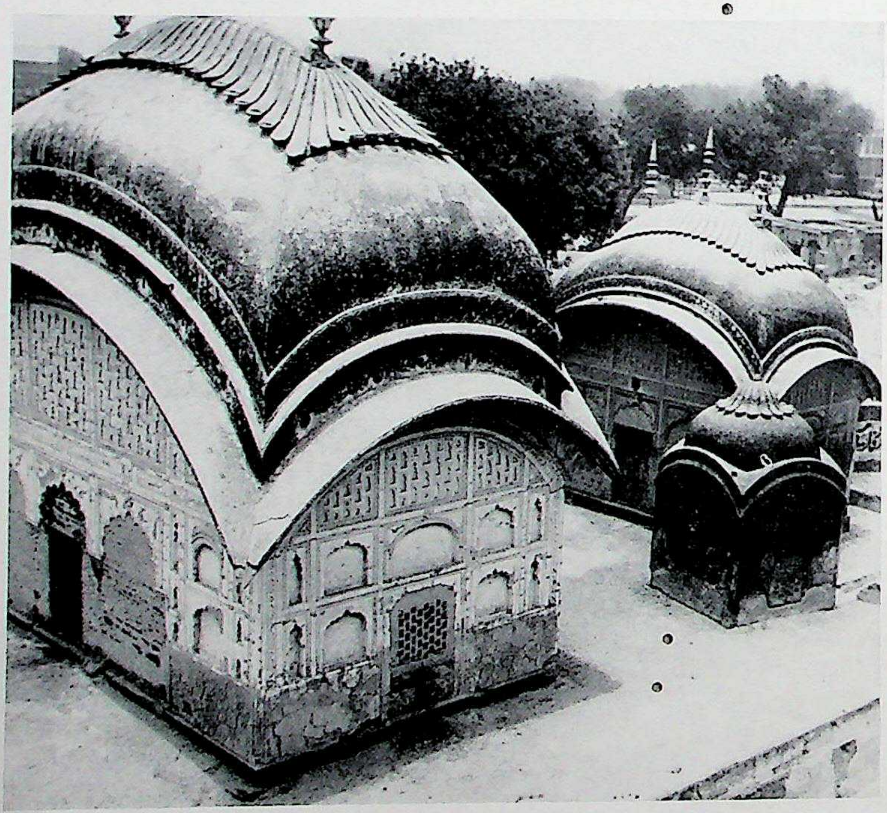
18. ADINA MOSQUE.— central bay of liwan, Pandua (Bengal), *c.* 1358–89.



19. ADINA MOSQUE -- detail of main mihrab.



20. BARA SONA MOSQUE, Gaur (Bengal), 14th century.



21. BUILDINGS AT REWARI, Punjab, early 19th century.

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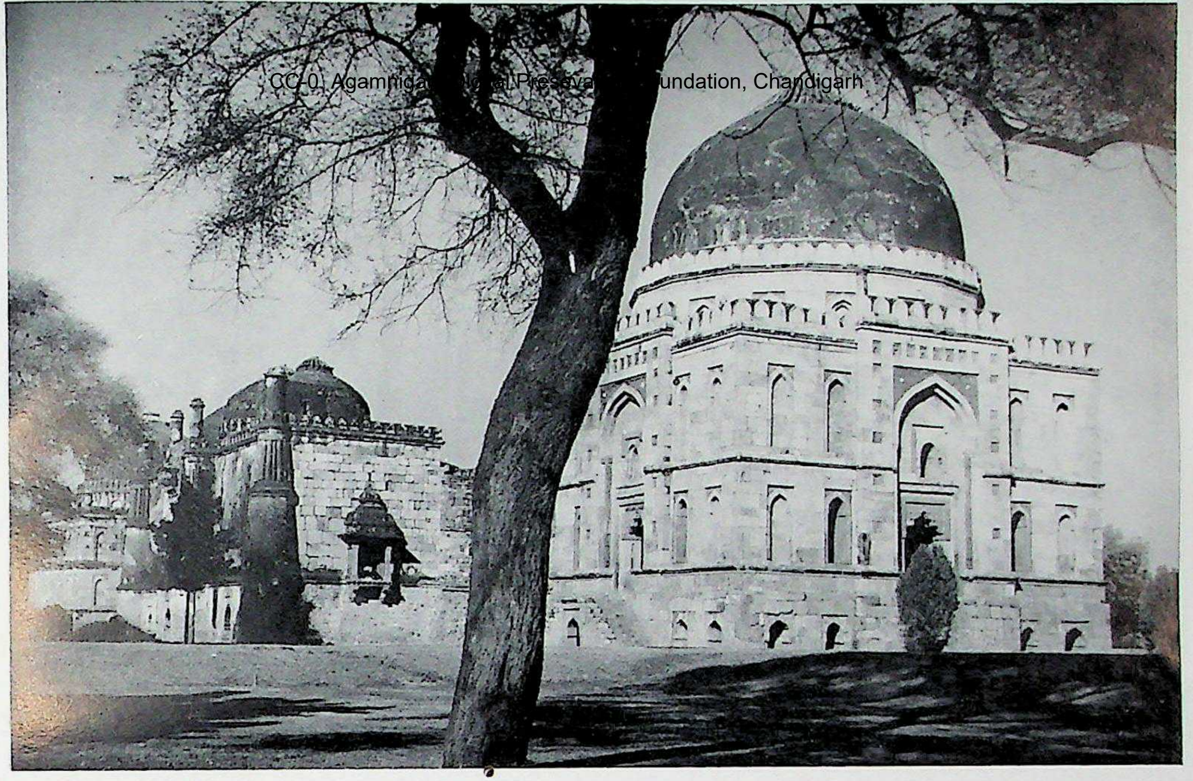
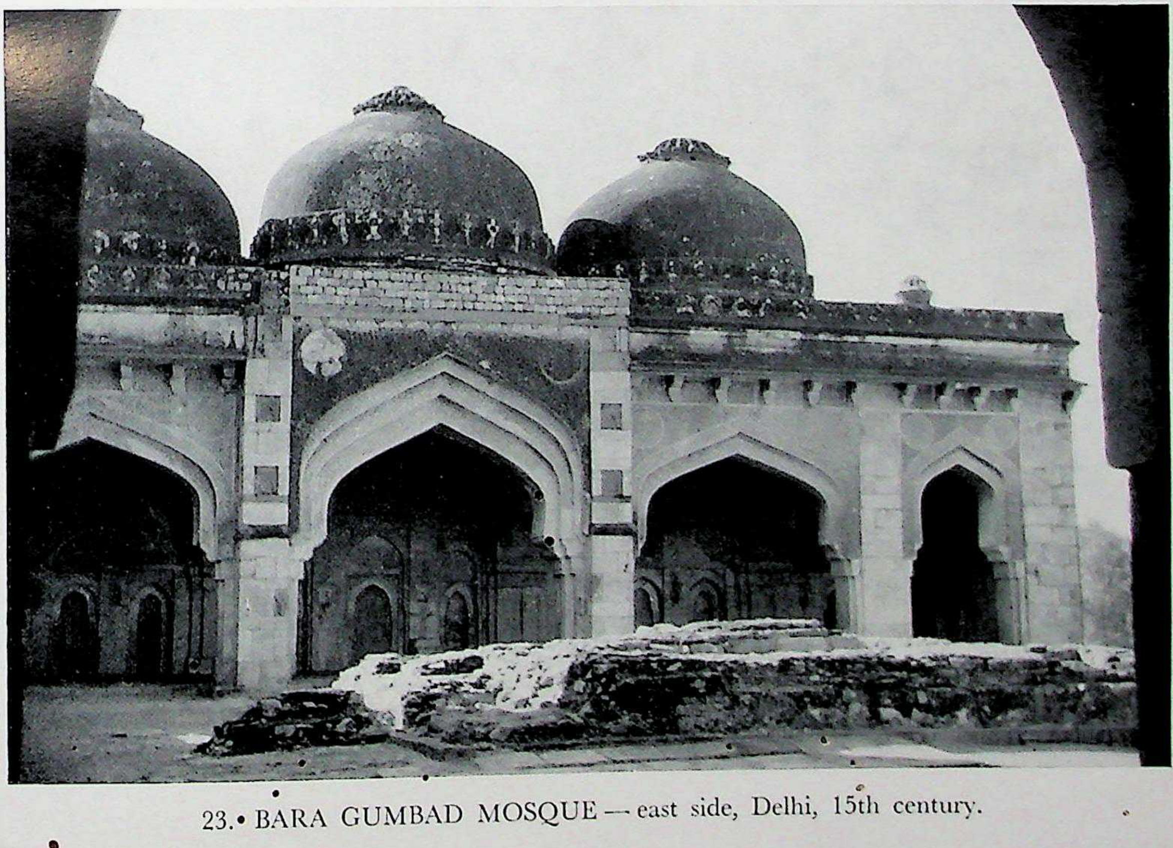
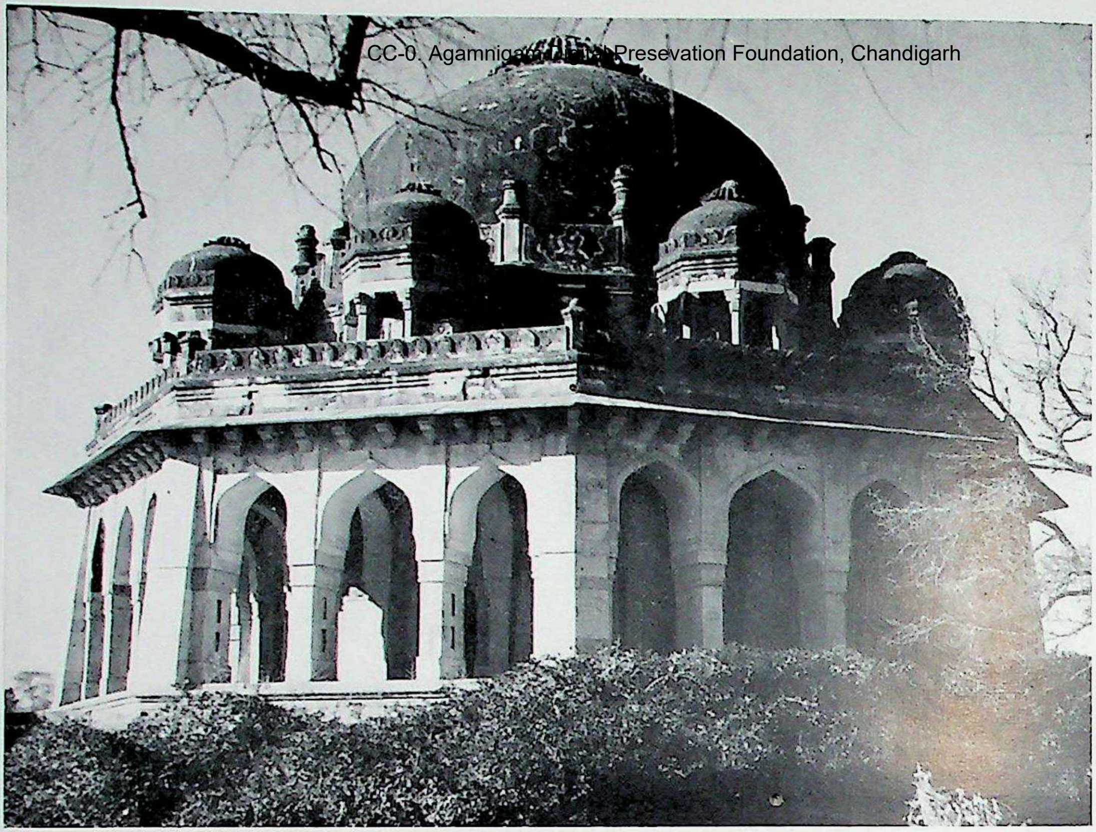


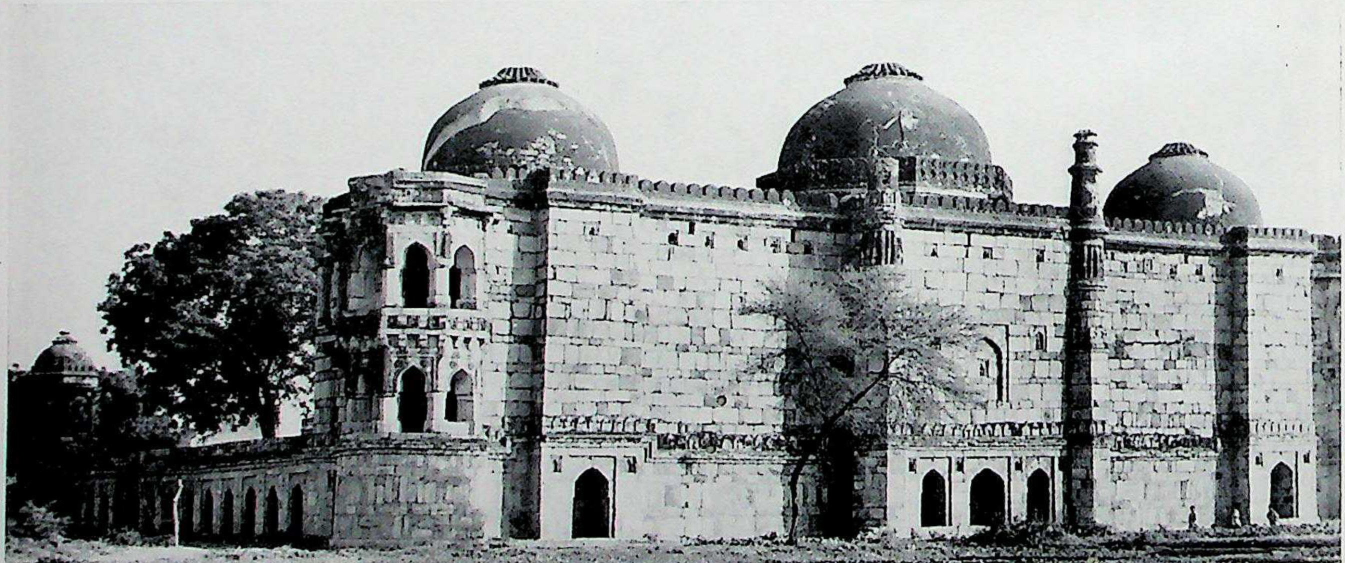
22. BARA GUMBAD AND MOSQUE, Delhi, 15th century.



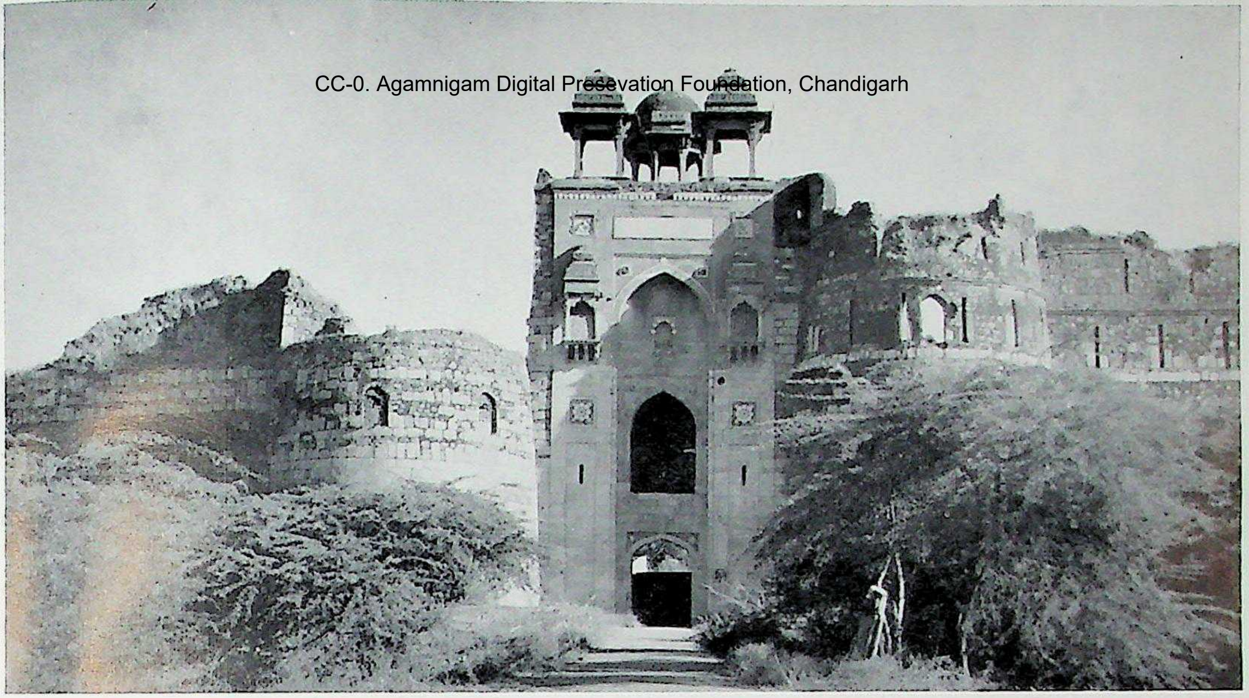
23. BARA GUMBAD MOSQUE — east side, Delhi, 15th century.



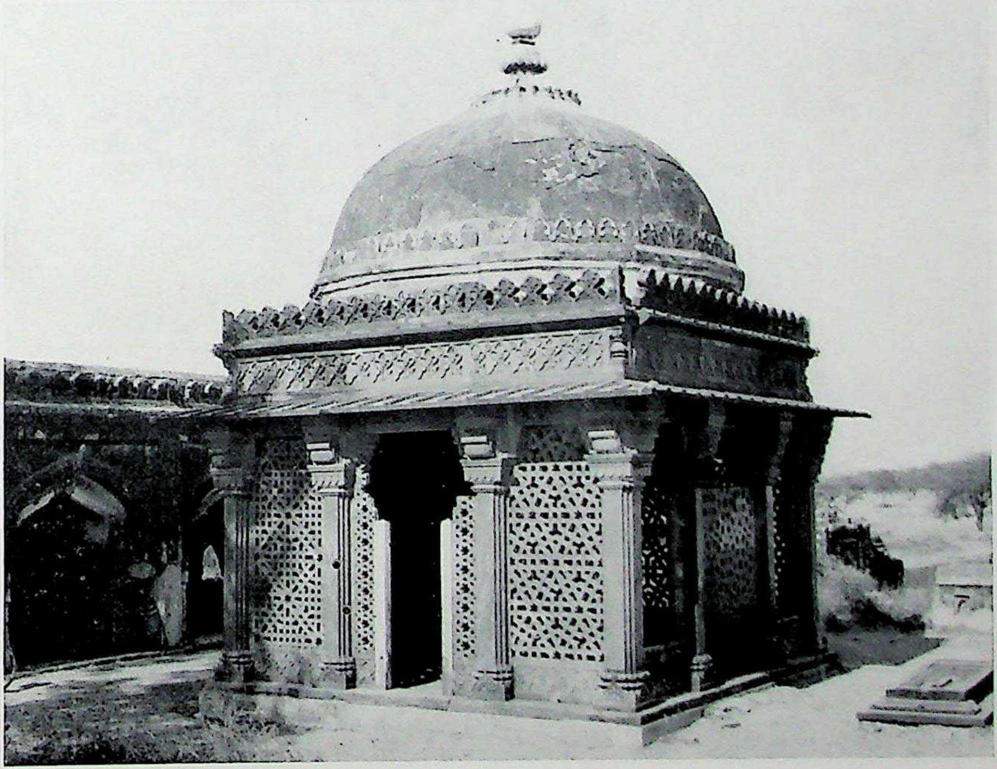
24. TOMB OF MUHAMMAD SHAH LODI, Delhi, *c.* 1440.



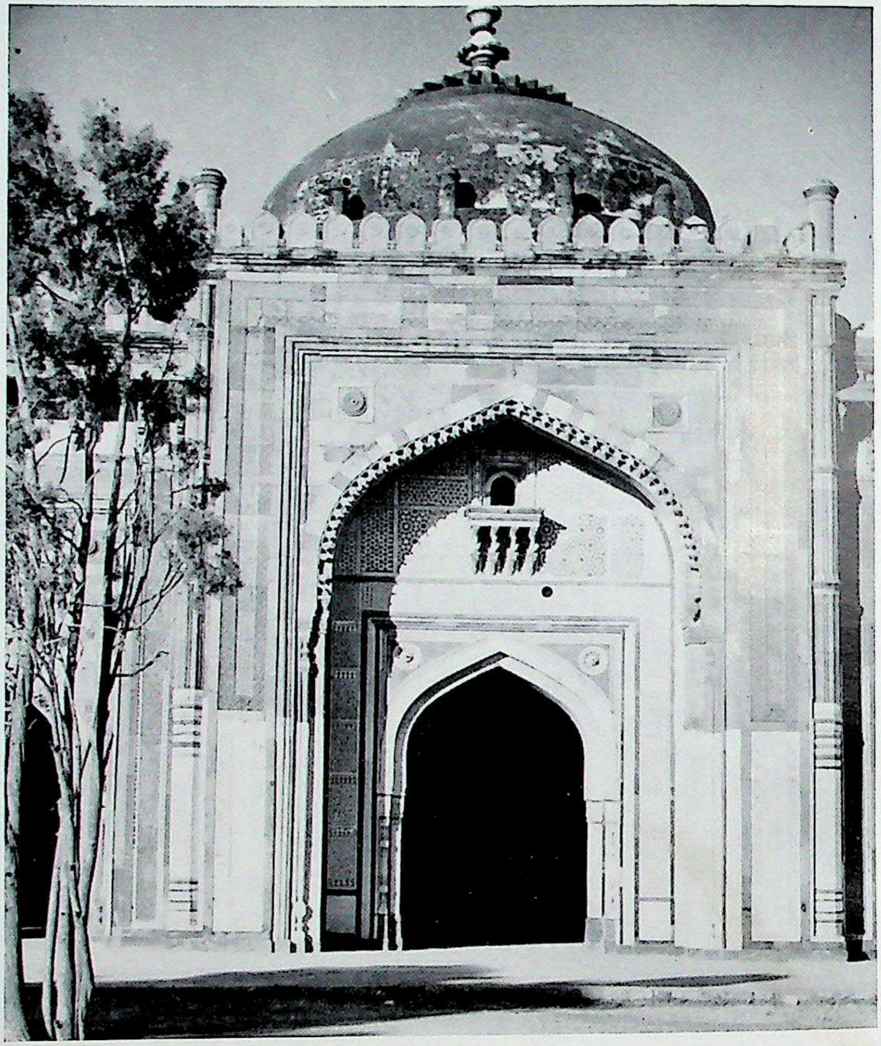
25. MOTH-KI-MASJID — west side, Delhi, *c.* 1505.



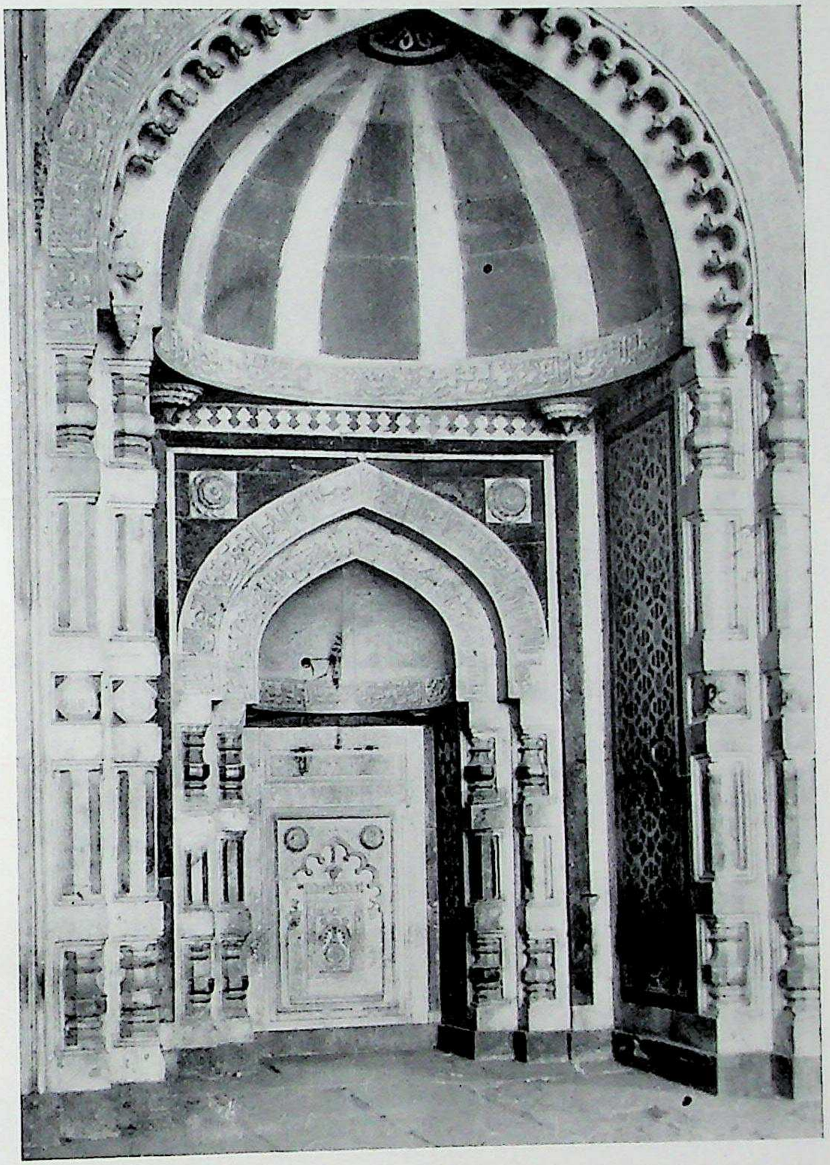
26. PURANA QILA — postern gate, Delhi, *c.* 1545.



27. TOMB OF SHEIKH YUSUF QATL — near Delhi.



28. QILA-I-KUHNA MOSQUE — east front, Delhi, *c.* 1545.



29. QILA-I-KUHNA MOSQUE — main mihrab.

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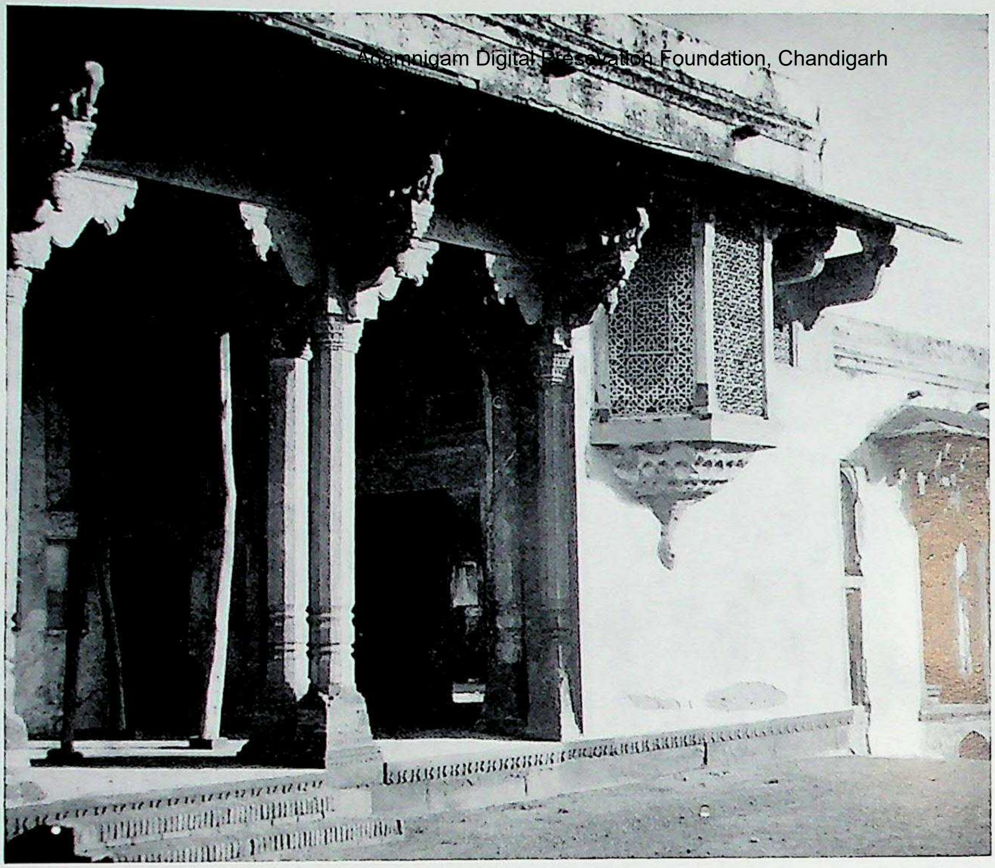
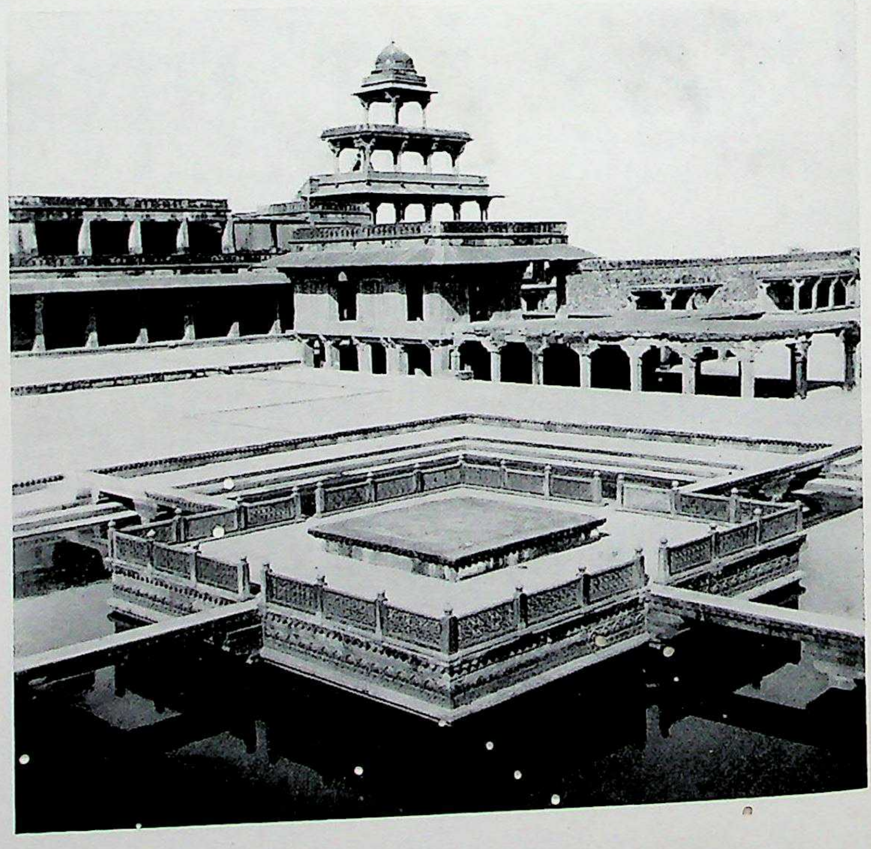
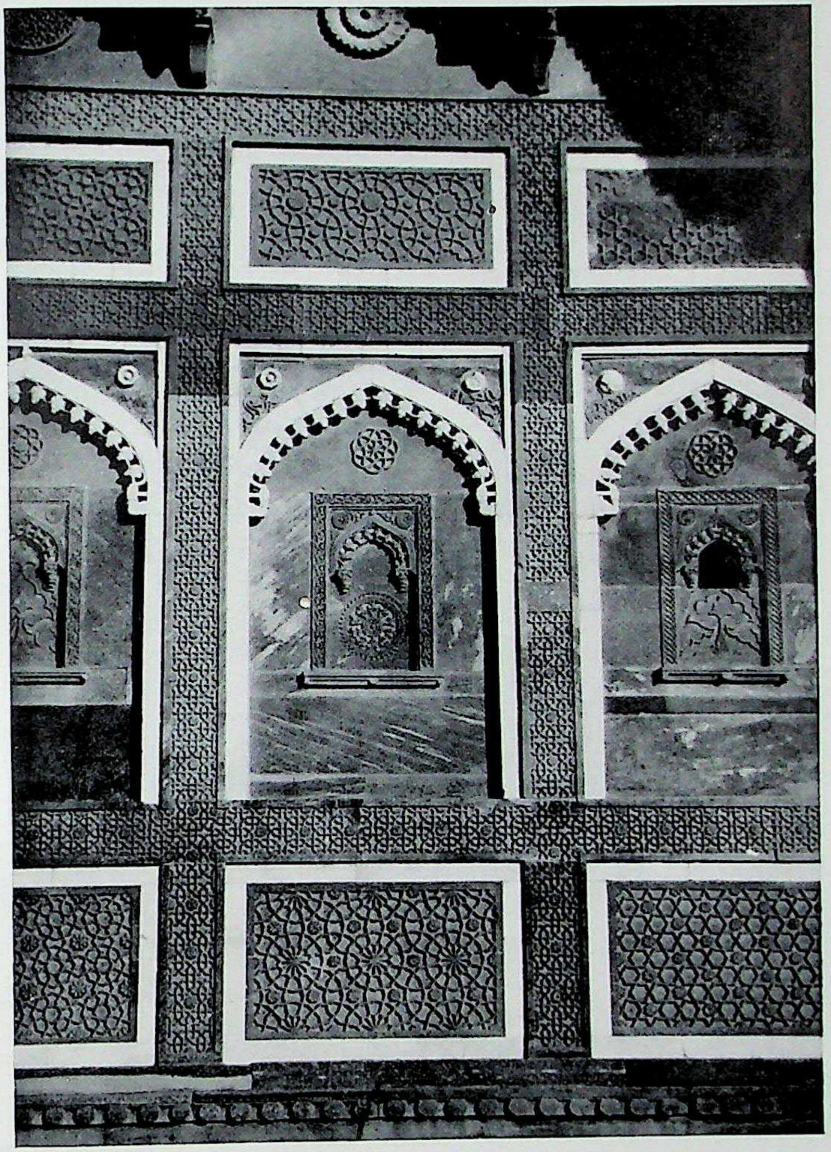


30. JEHANGIR MAHAL, Lahore Fort, *c.* 1610.



31. FATEHPUR SIKRI —
inner palace, *c.* 1575.



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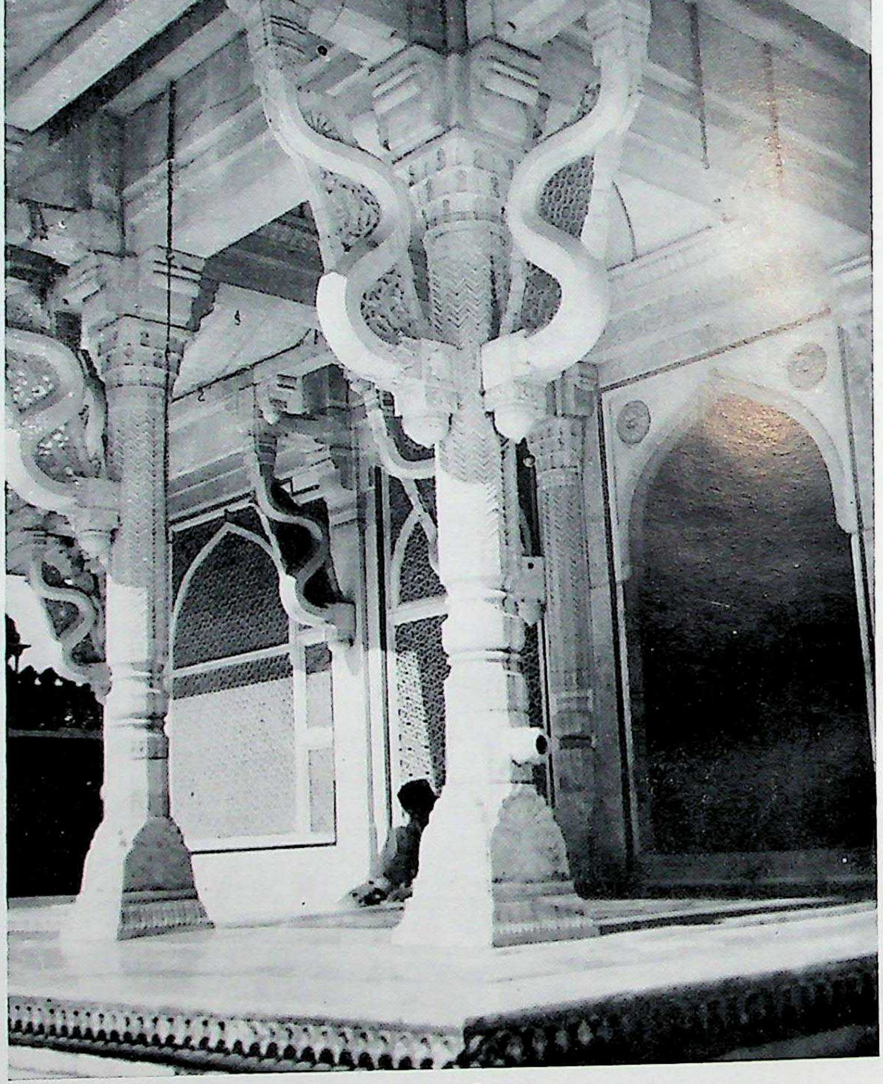

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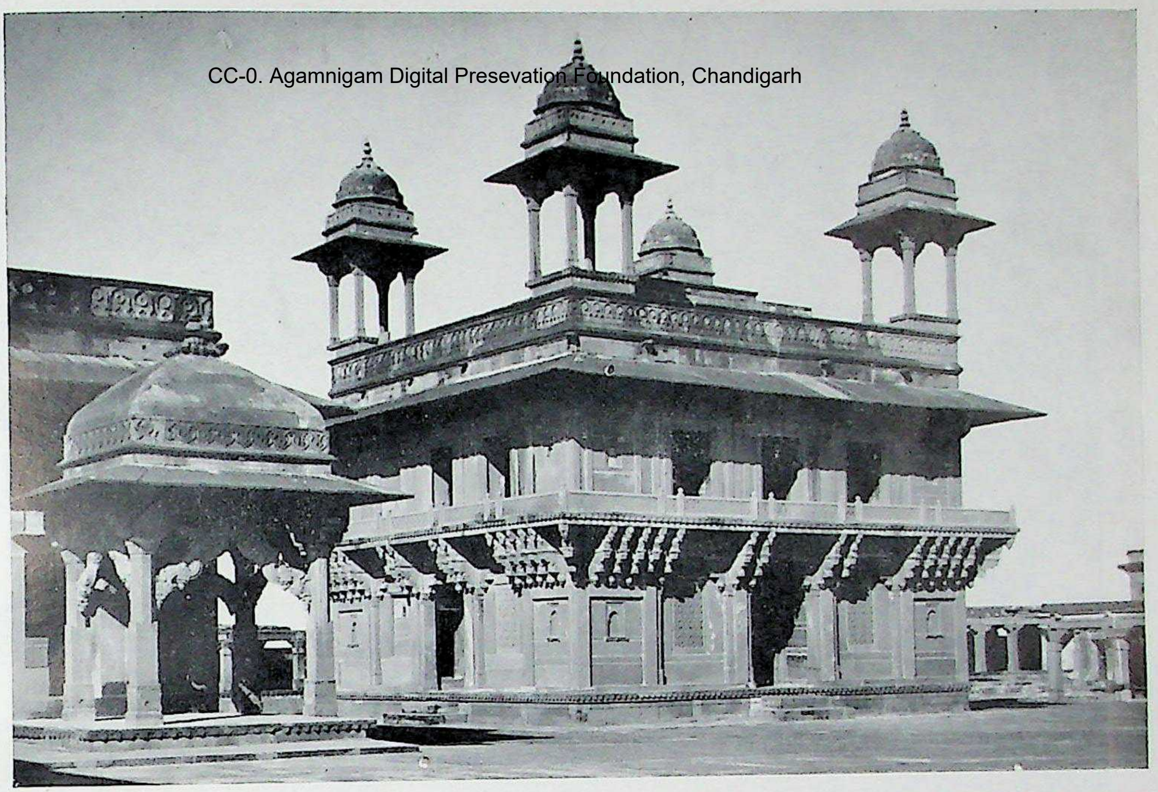
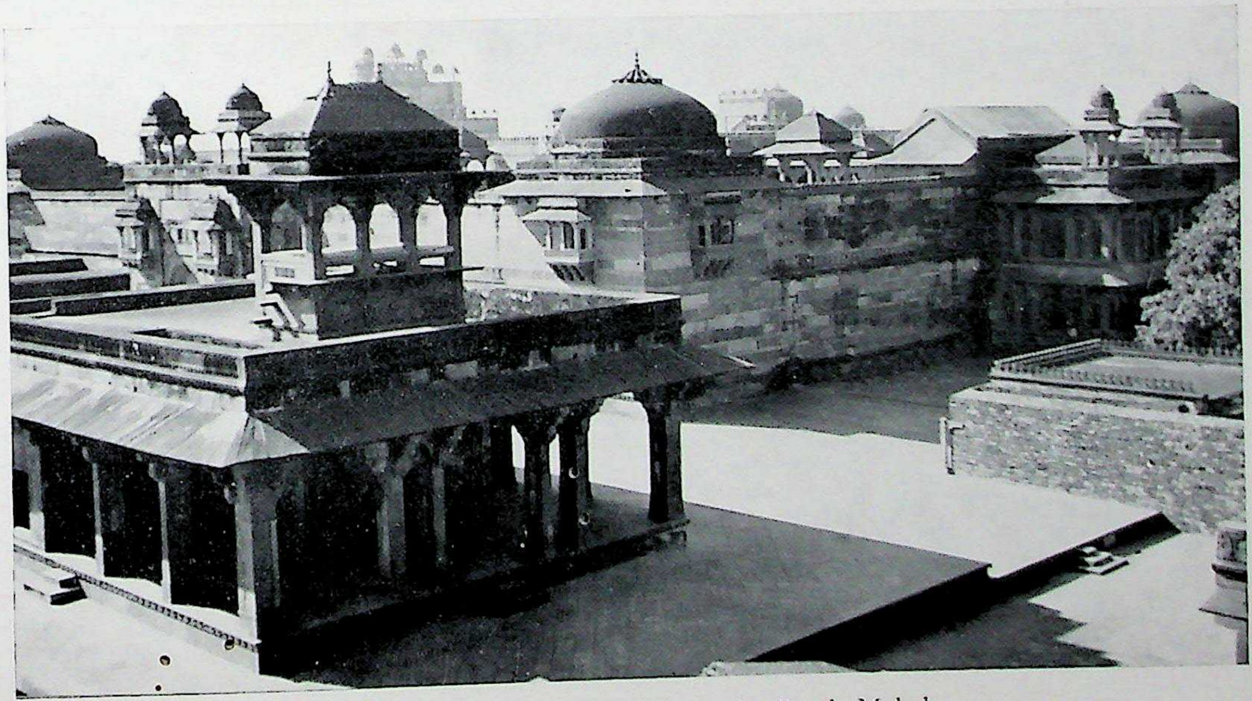
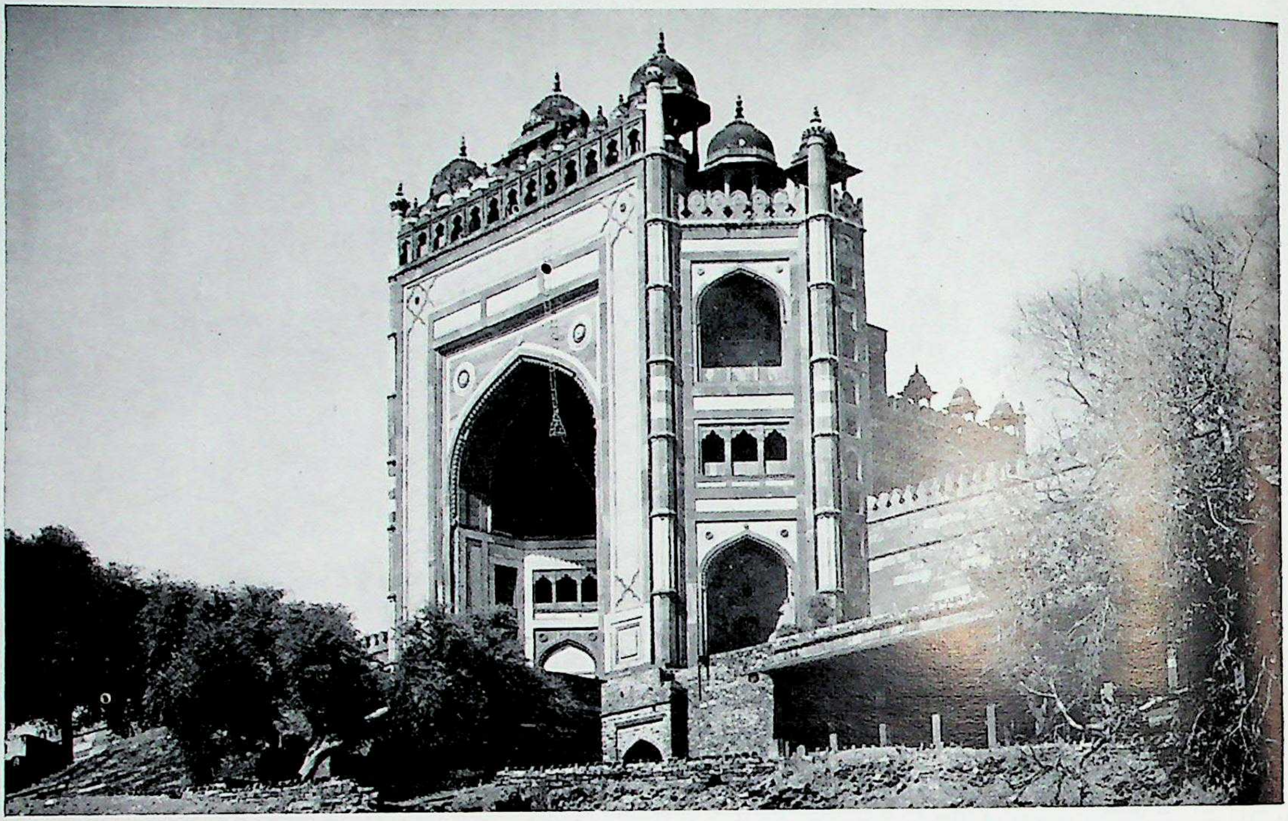


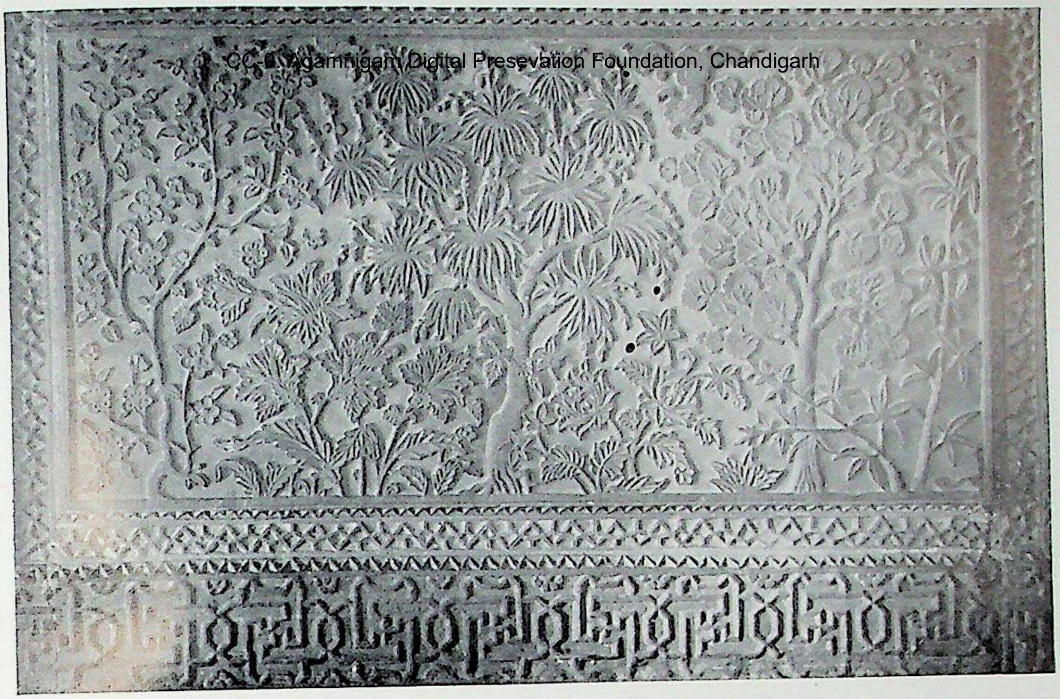
34. FATEHPUR SIKRI — Mahal-i-Khas.



35. FATEHPUR SIKRI — from the Panch Mahal.



36. FATEHPUR SIKRI — Bulan Darwaza.



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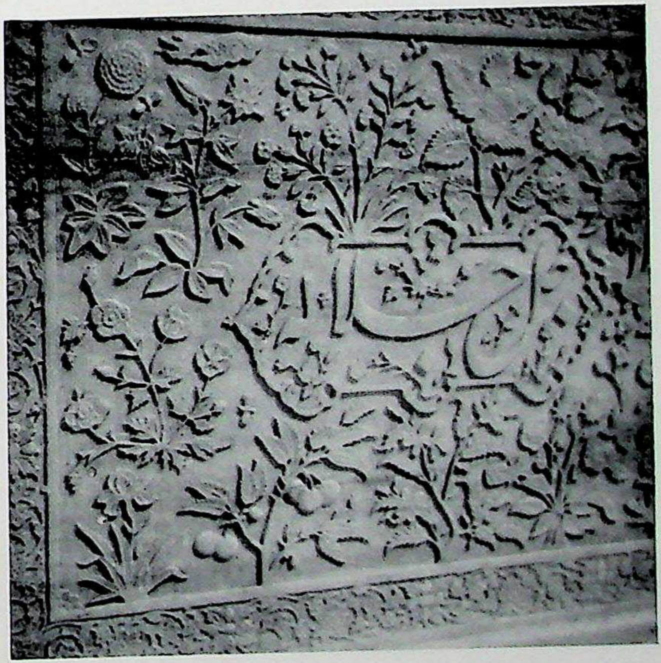
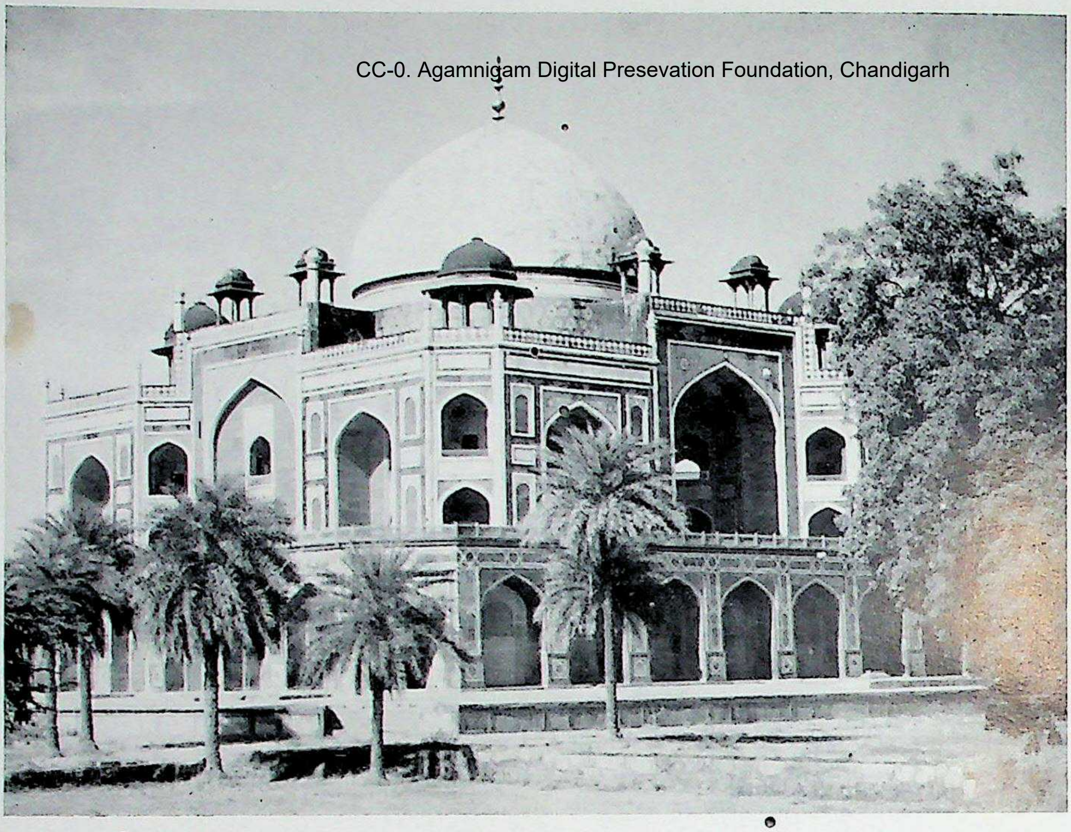
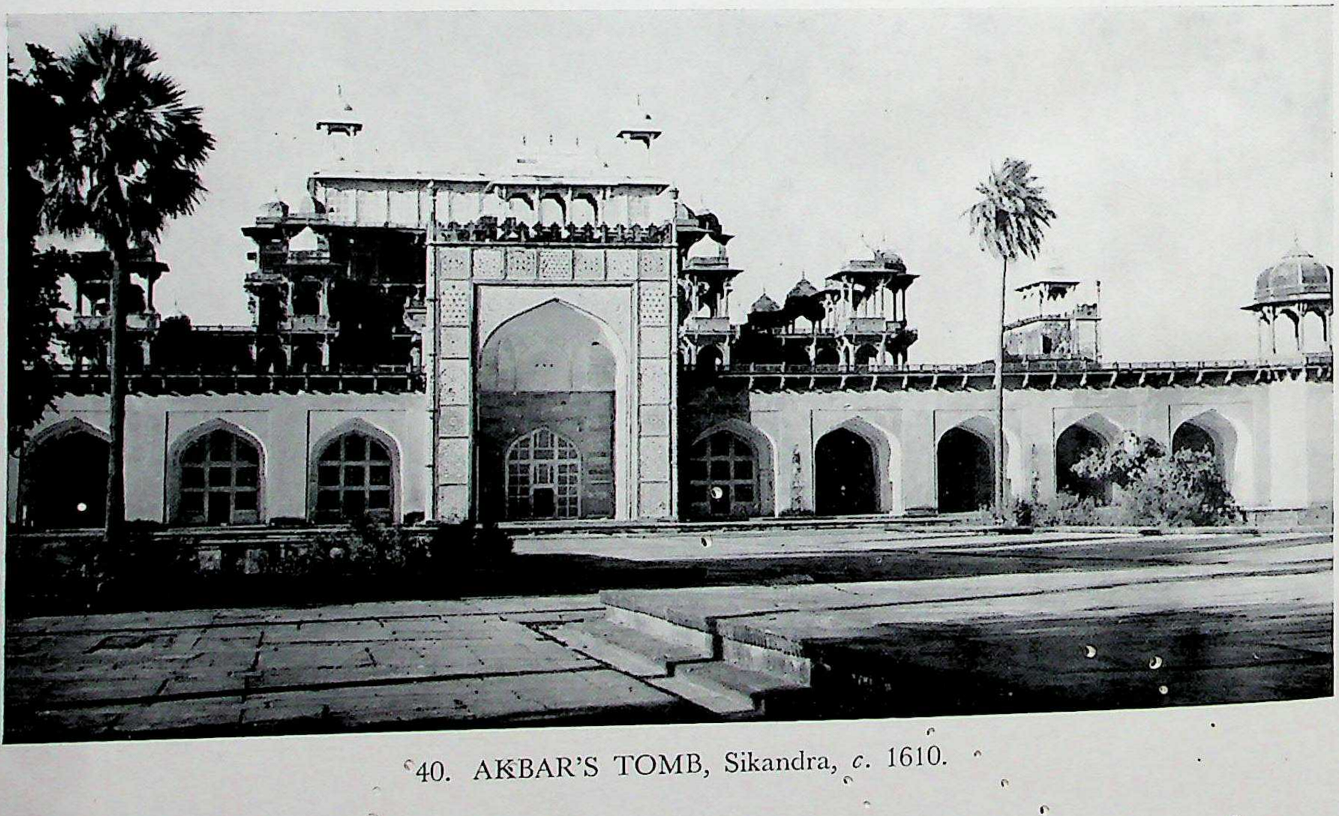


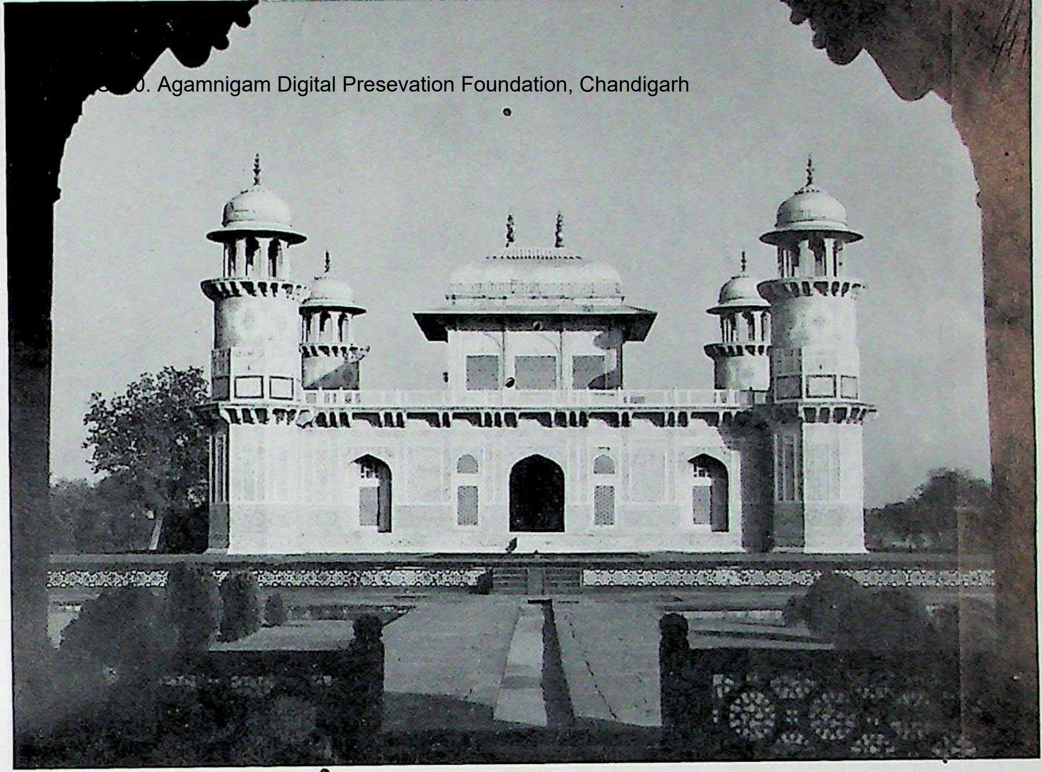
38. AKBAR'S TOMB — detail, Sikandra, *c.* 1610.



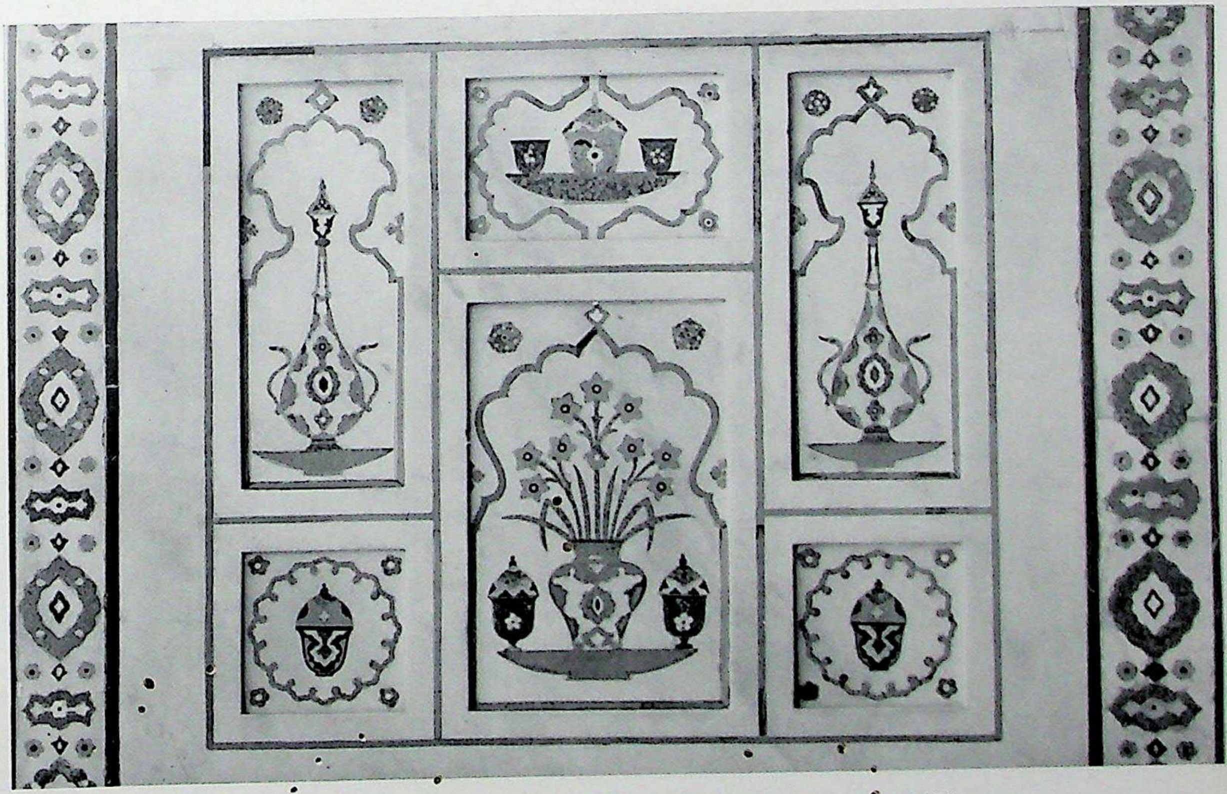
39. HUMAYUN'S TOMB, Delhi, 1565.



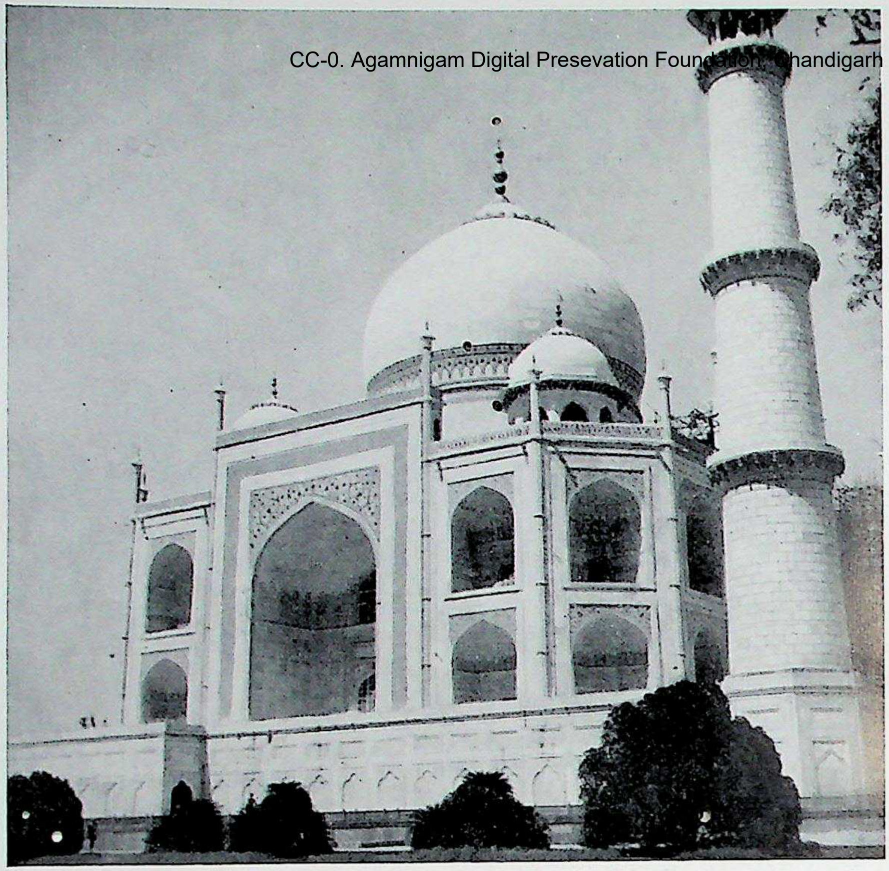
40. AKBAR'S TOMB, Sikandra, *c.* 1610.



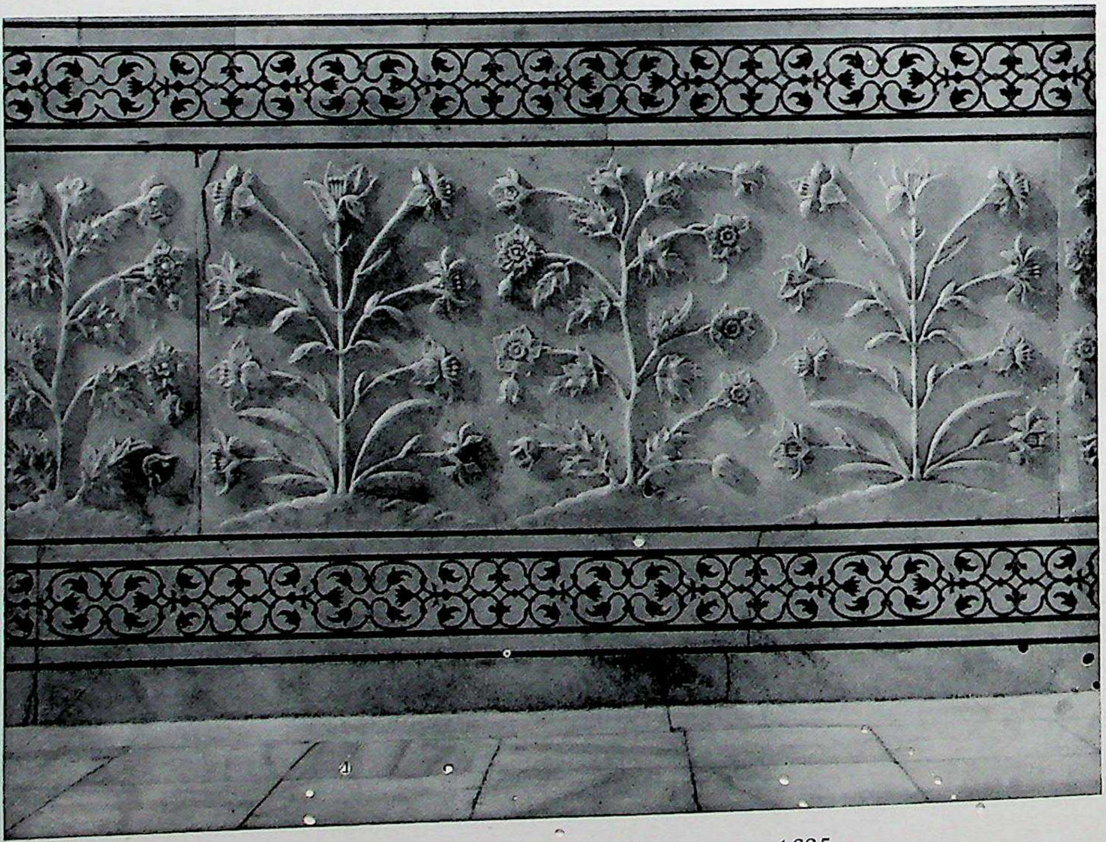
41. TOMB OF ITM-UD-DAULA, Agra, *c.* 1630.



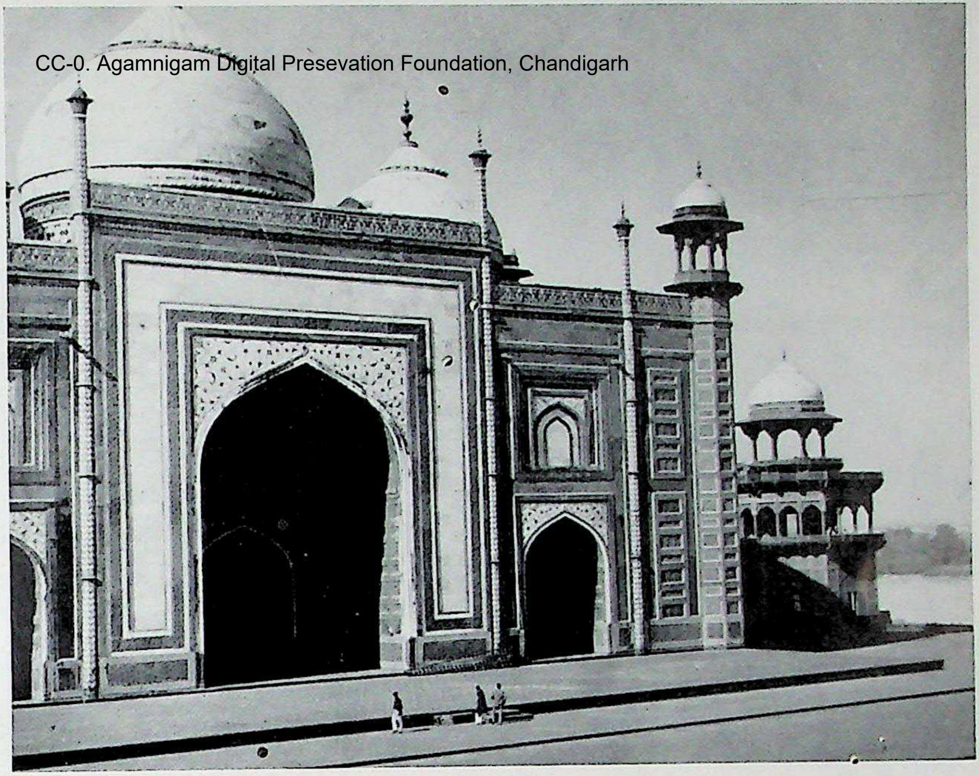
42. TOMB OF ITM-UD-DAULA — detail, Agra, *c.* 1630.



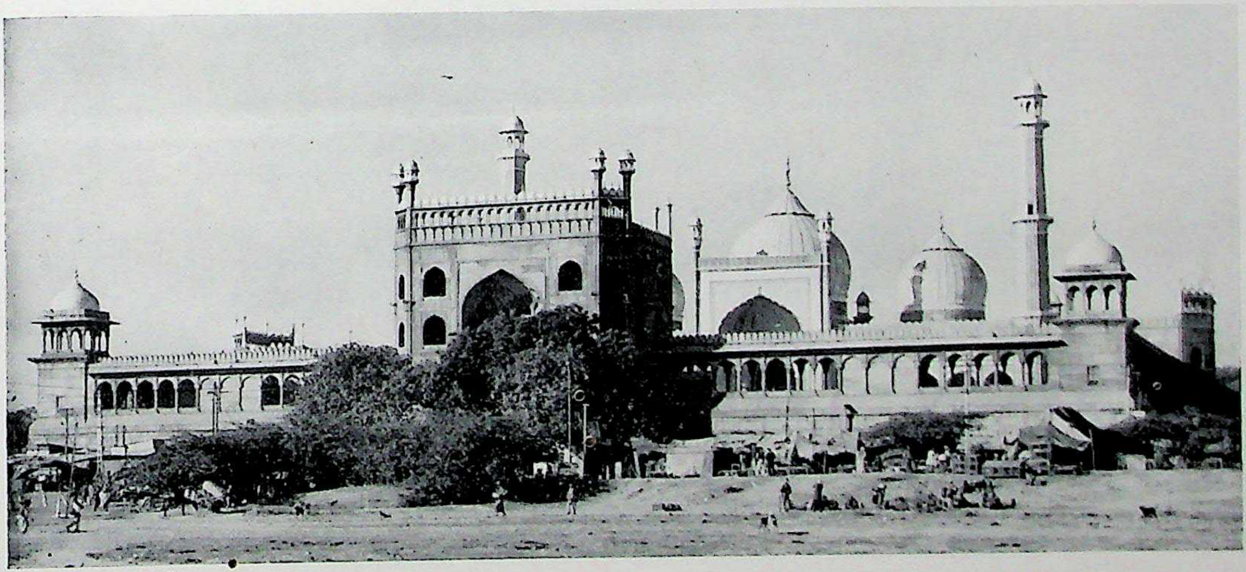
43. TAJ MAHAL — detail, Agra, *c*. 1635.



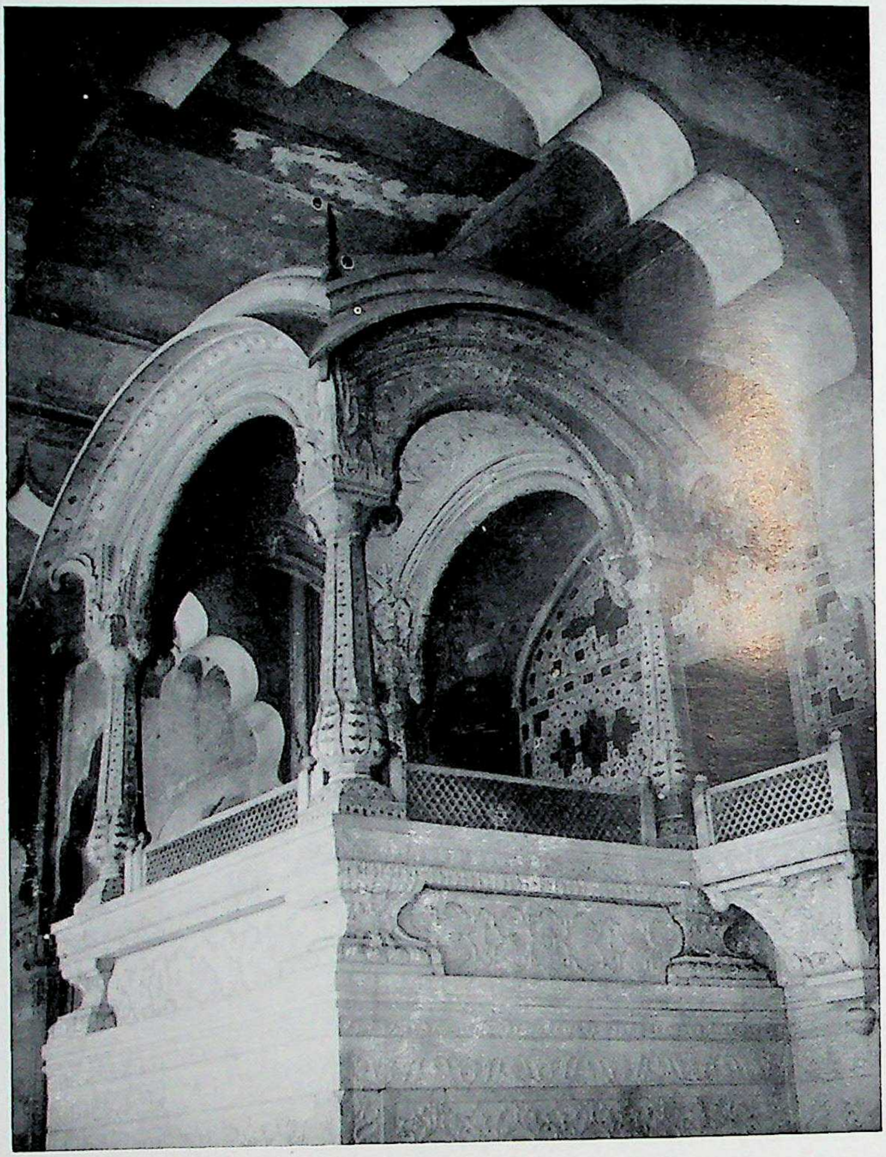
44. TAJ MAHAL — detail, Agra, *c*. 1635.



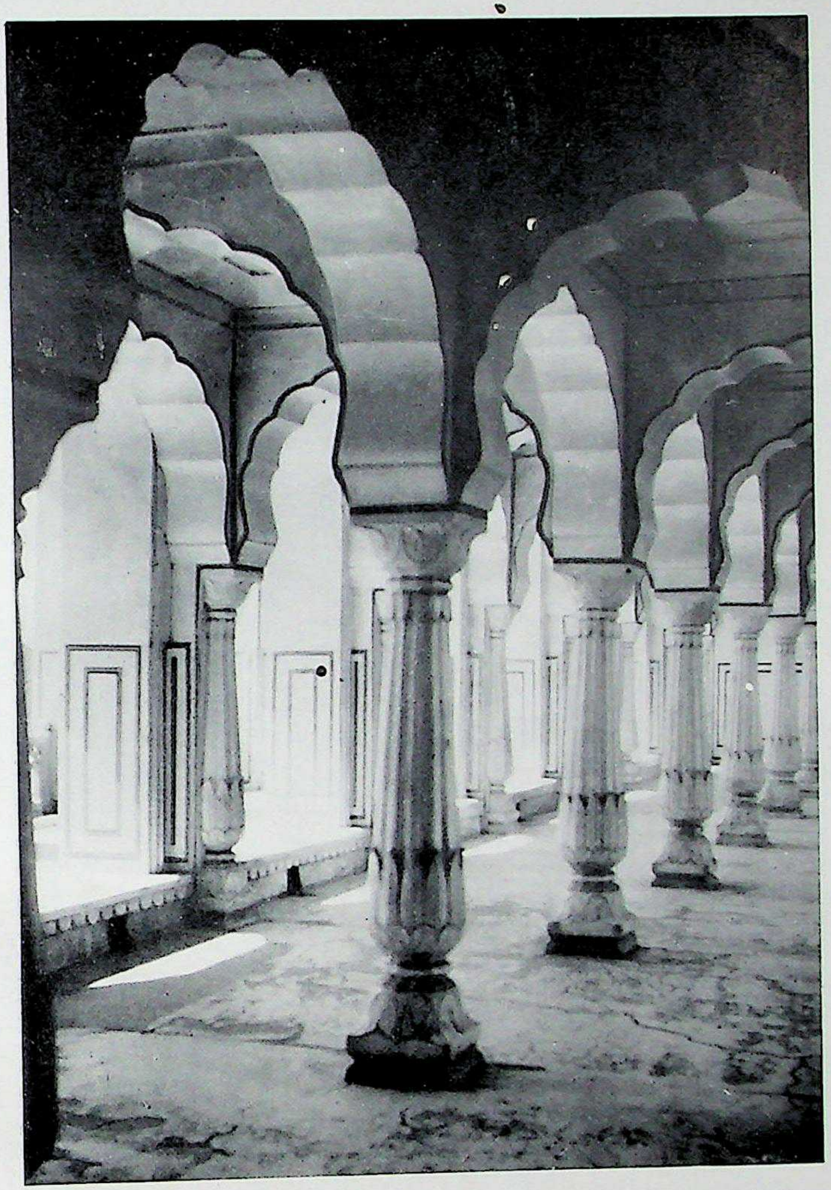
45. TAJ MAHAL MOSQUE, Agra, *c.* 1635.



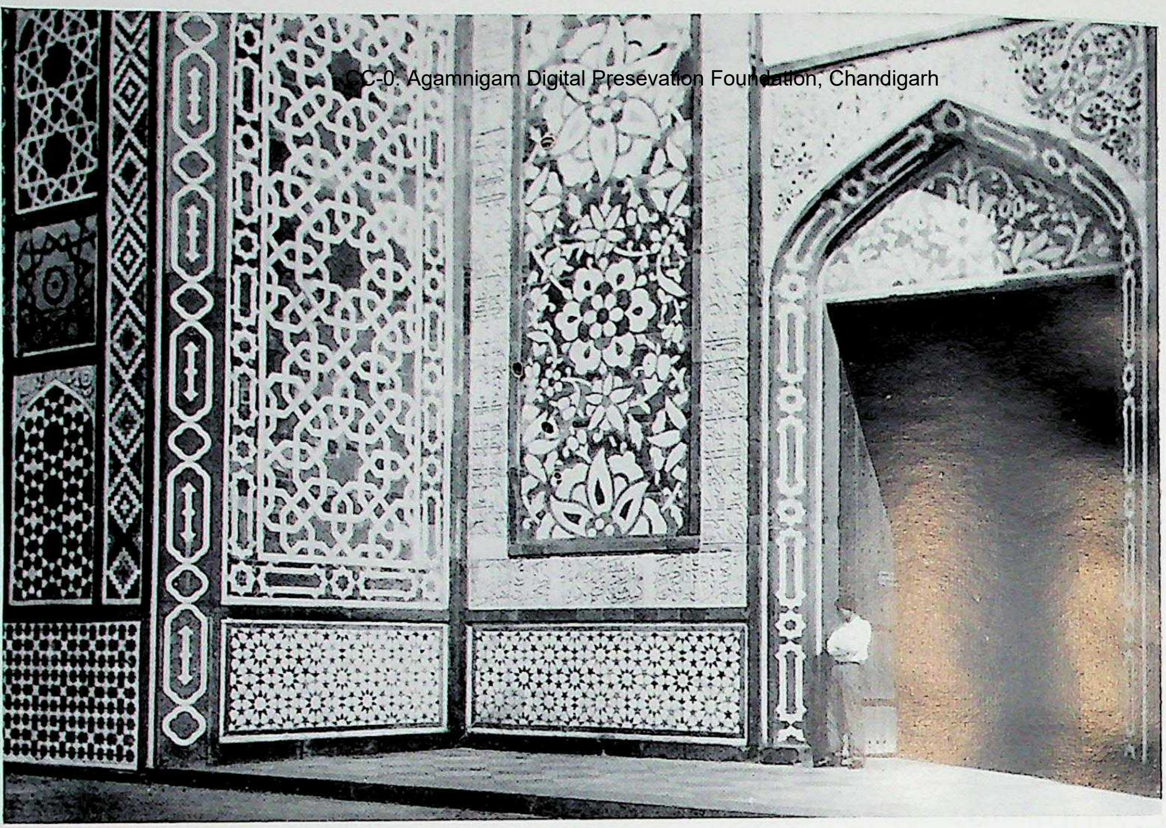
46. MASJID-I-JUMA — Friday mosque, Delhi, 1644–58.



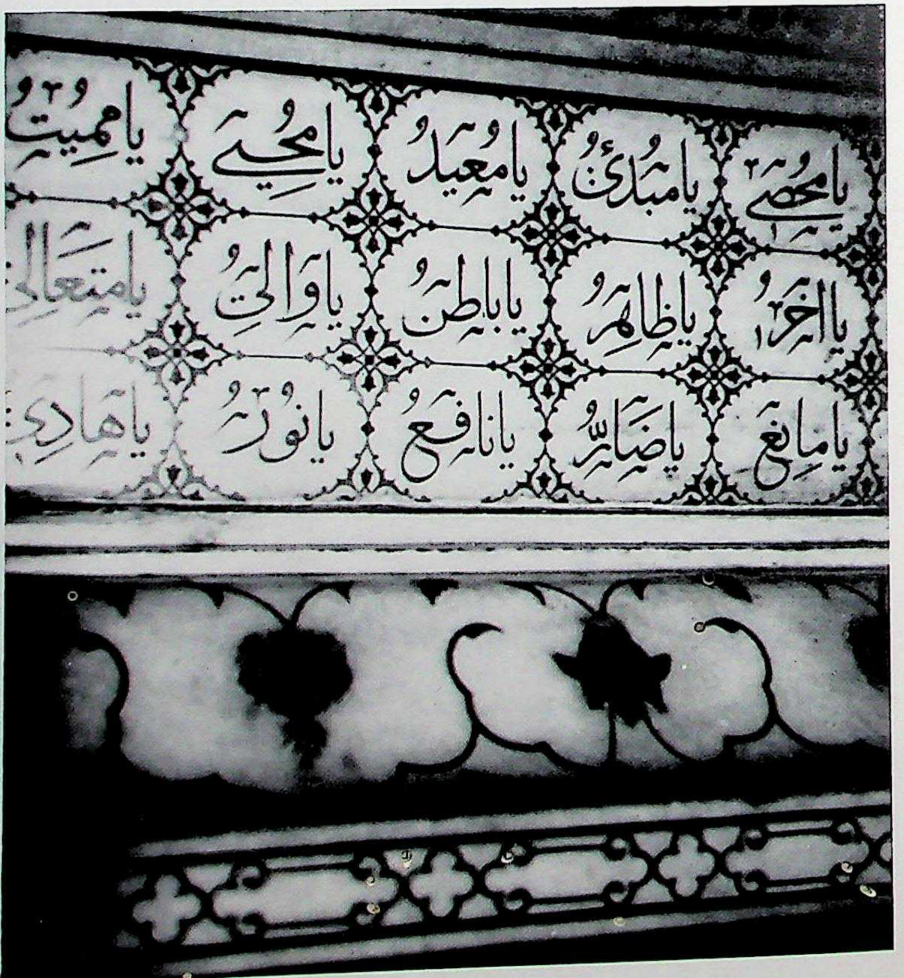
47. DIWAN-I-KHAS — throne canopy, Delhi Fort, 17th century.



48. DIWAN-I-KHAS — Amber palace, Jaipur (Rajputana), late 16th century.



49. AKBAR'S TOMB — detail of gate, Sikandra, *c.* 1610.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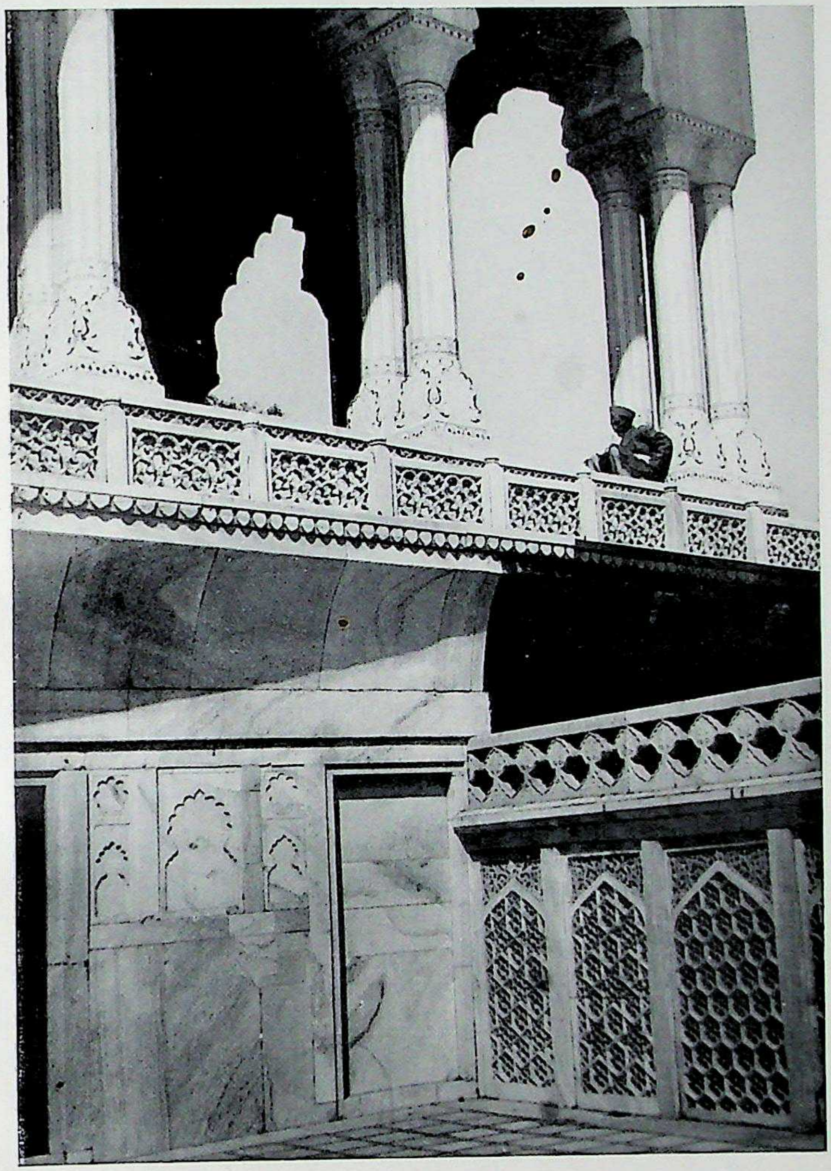
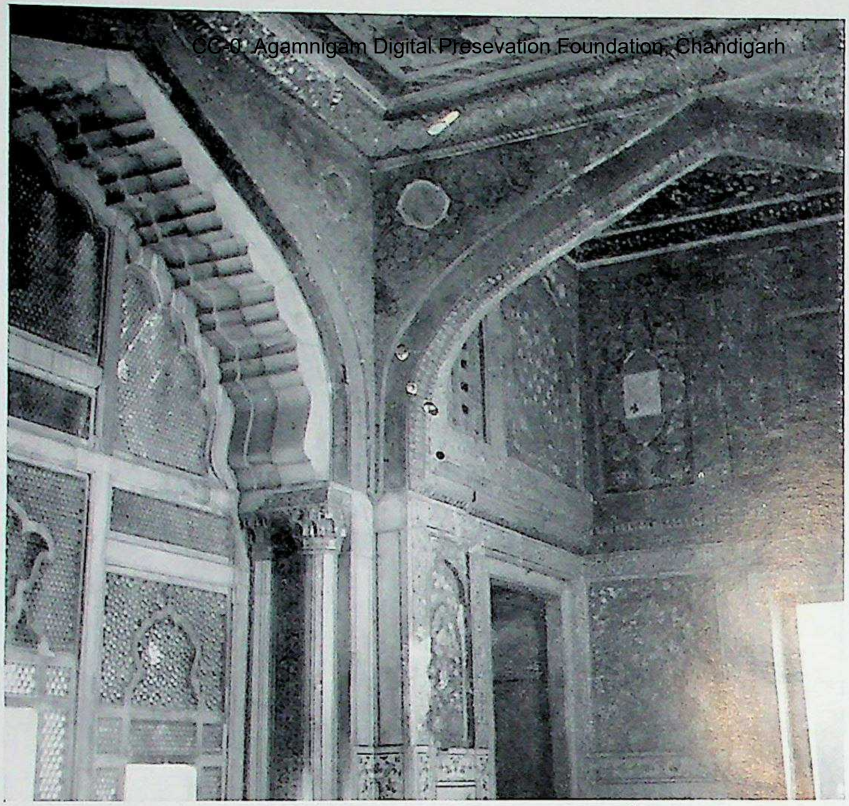
يا هادي

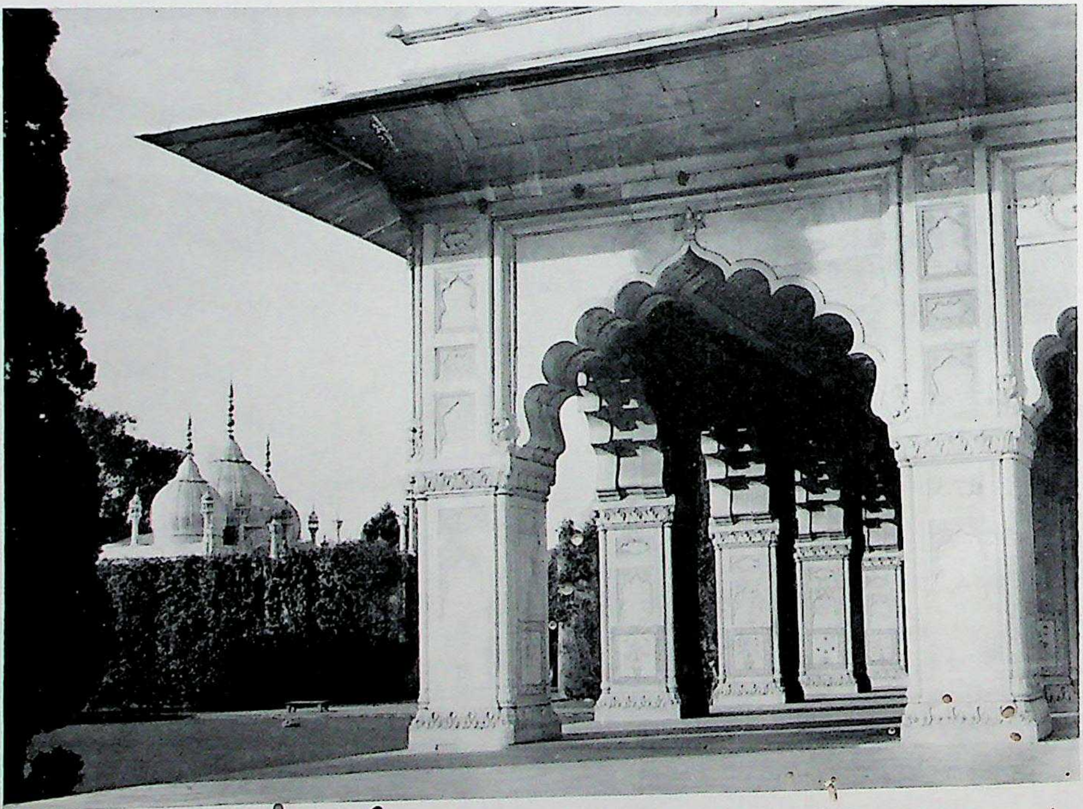
50. JEHANGIR'S TOMB — detail, Lahore, *c.* 1625.



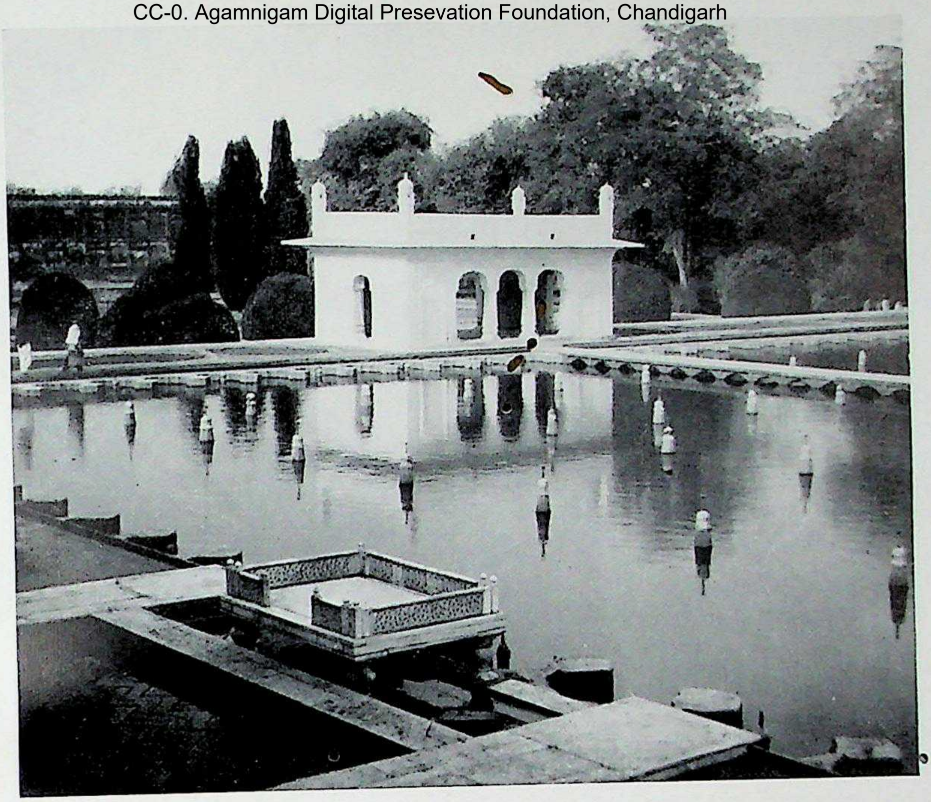
51. MAHAL-I-KHAS — palace, Agra Fort, 1635.



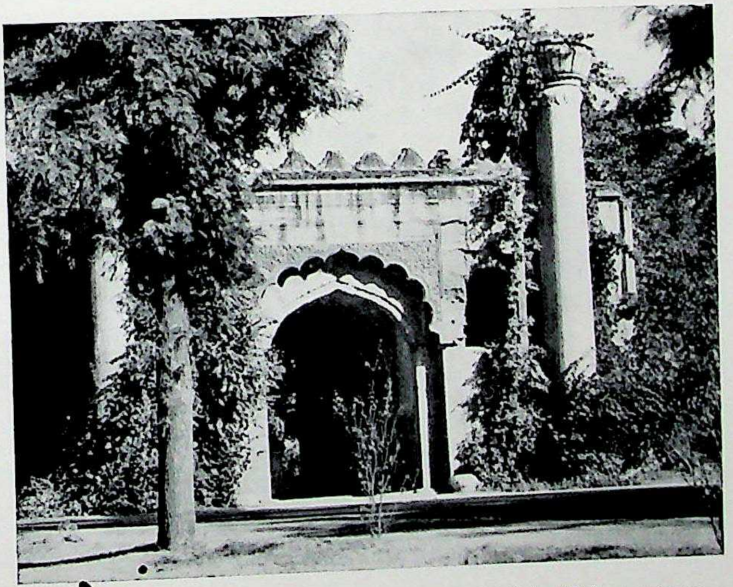
52. SHISH MAHAL — Palace of Mirrors, Lahore Fort.



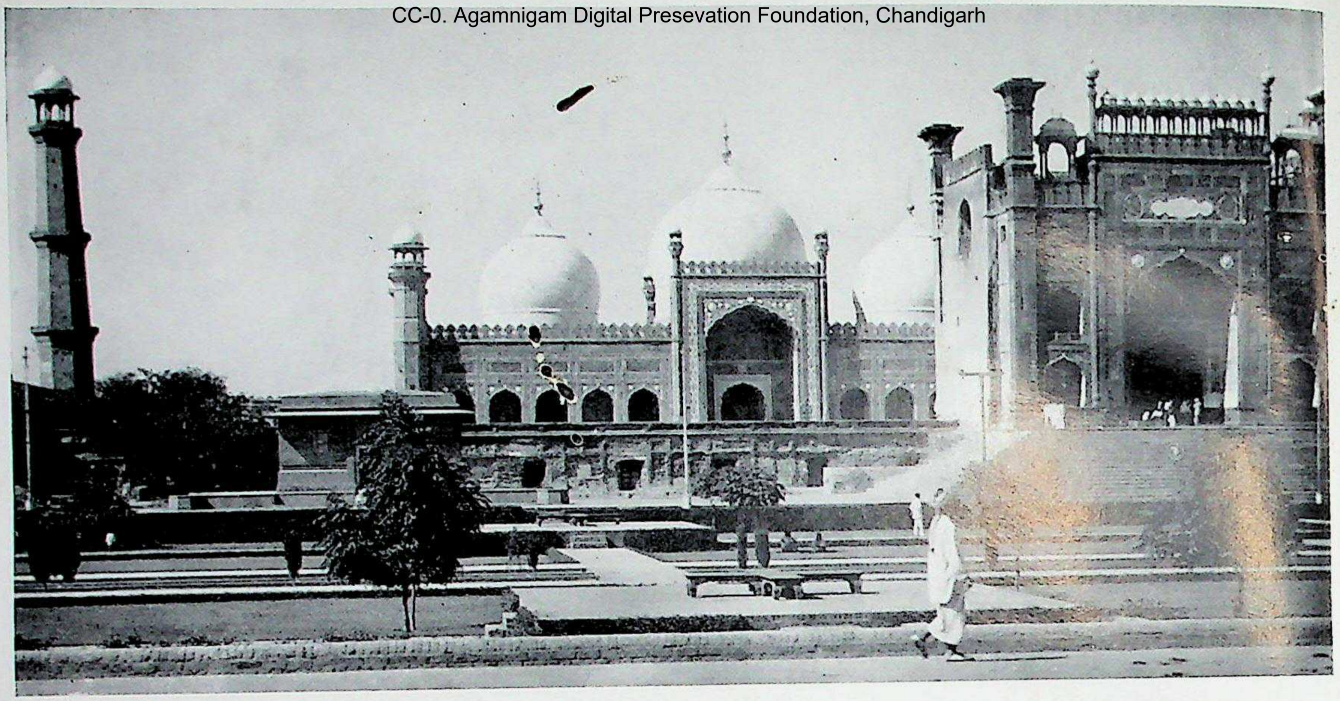
53. DIWAN-I-KHAS and PEARL MOSQUE, Delhi, 17th century.



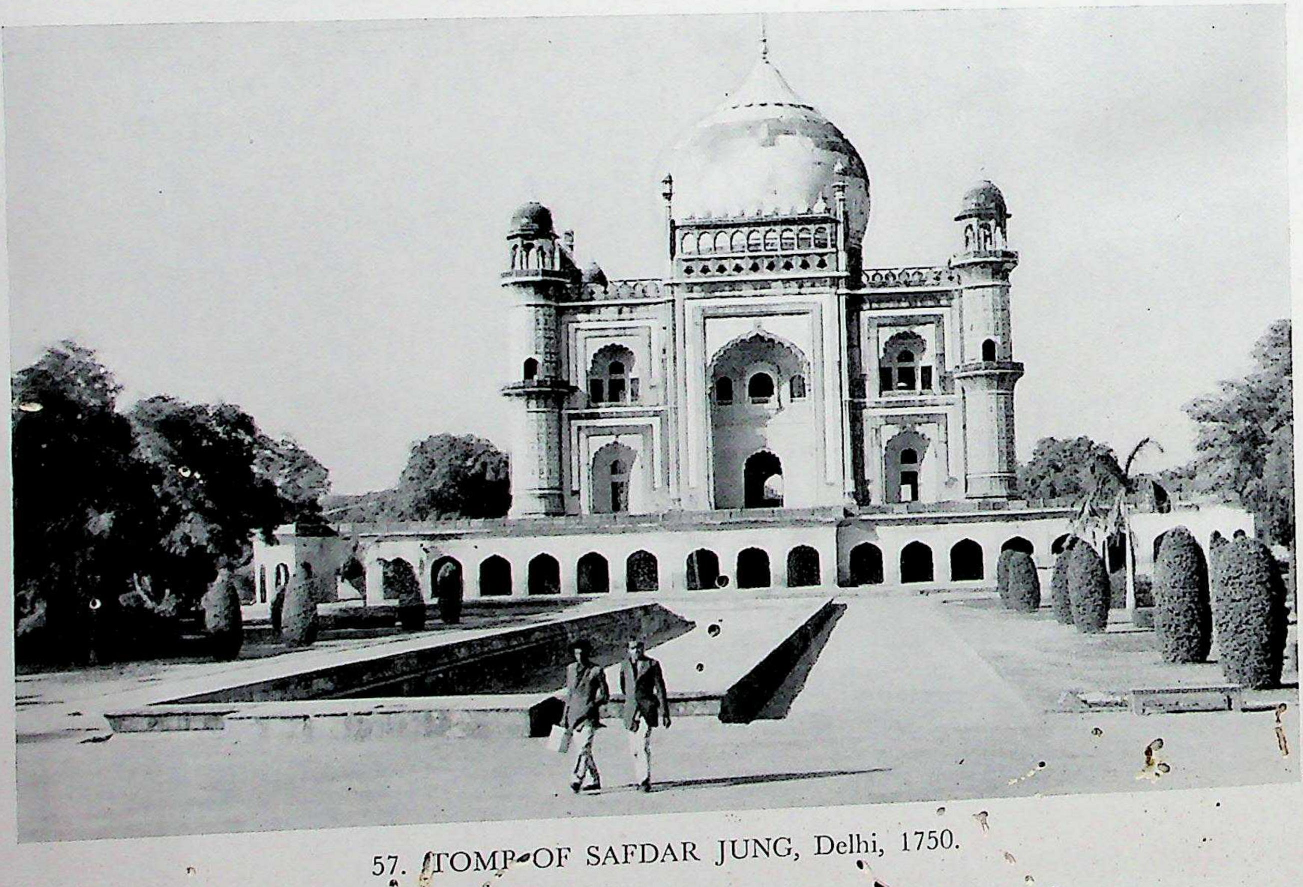
54. SHALAMAR GARDEN, Lahore, 17th century.



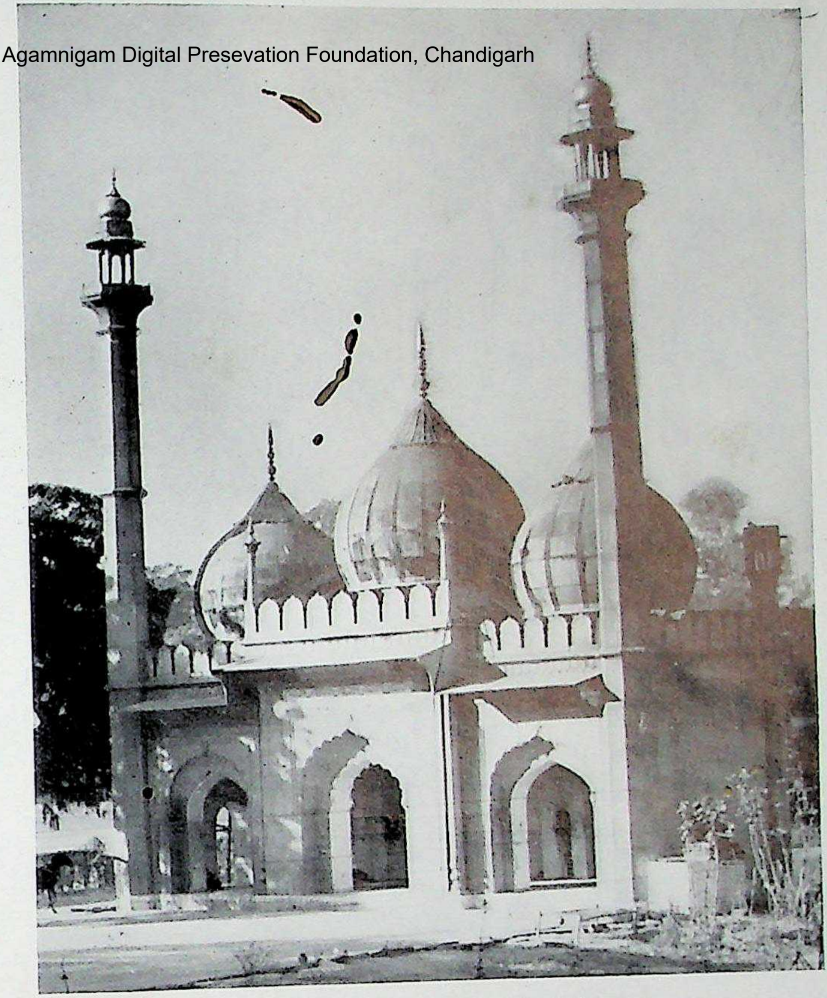
55. QUDSIA GARDEN — gateway, Delhi, 18th century.



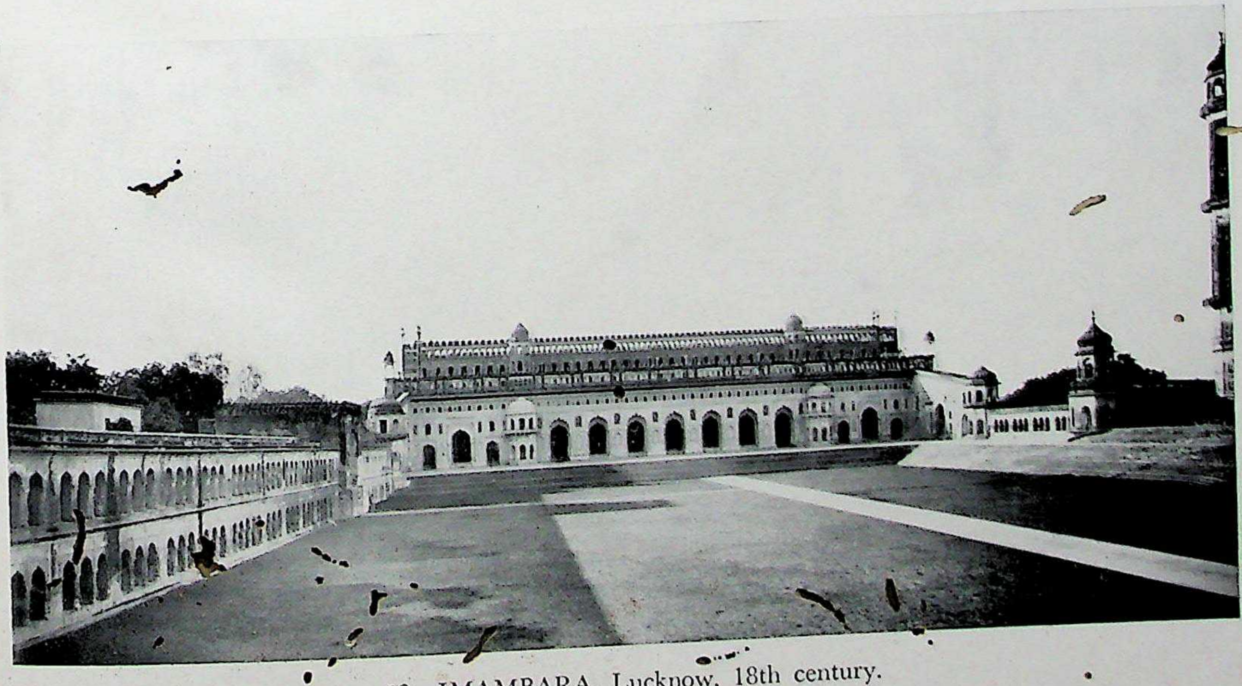
56. BADSHAHI MOSQUE, Lahore, 1675.



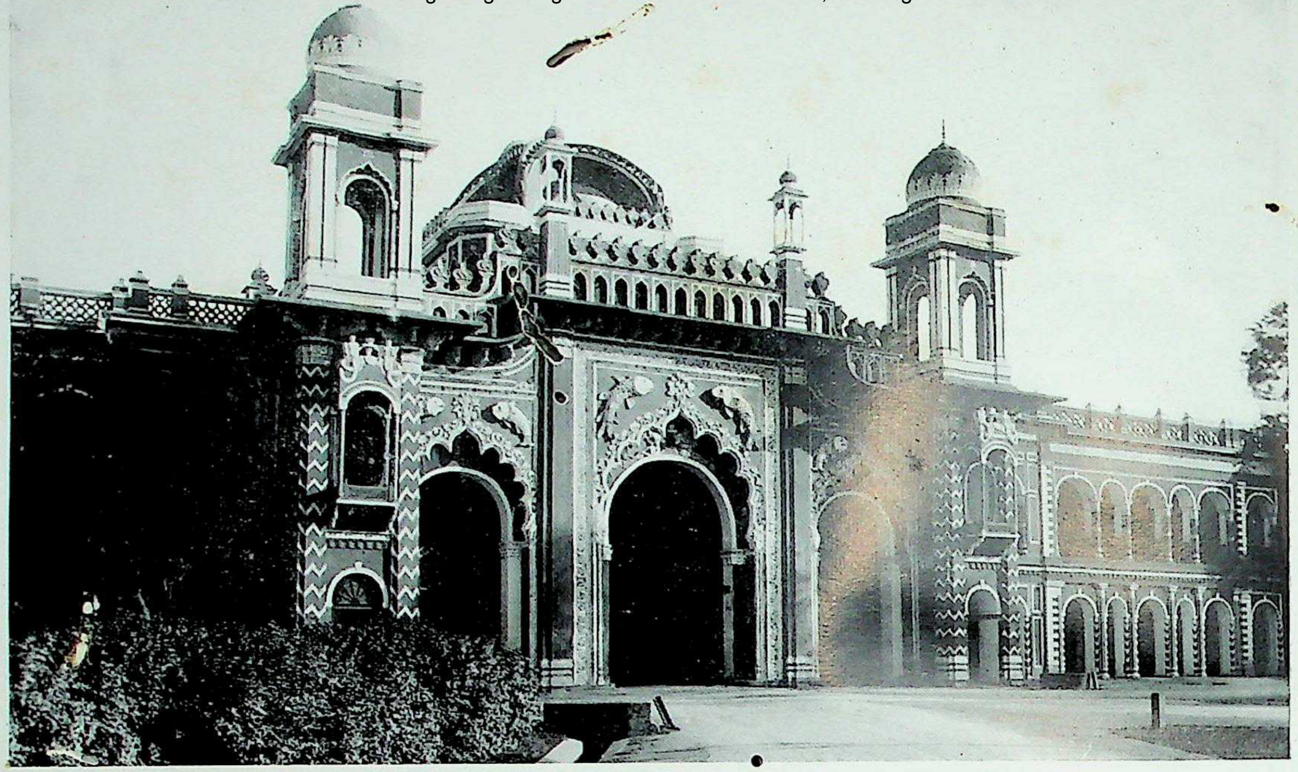
57. TOMB OF SAFDAR JUNG, Delhi, 1750.



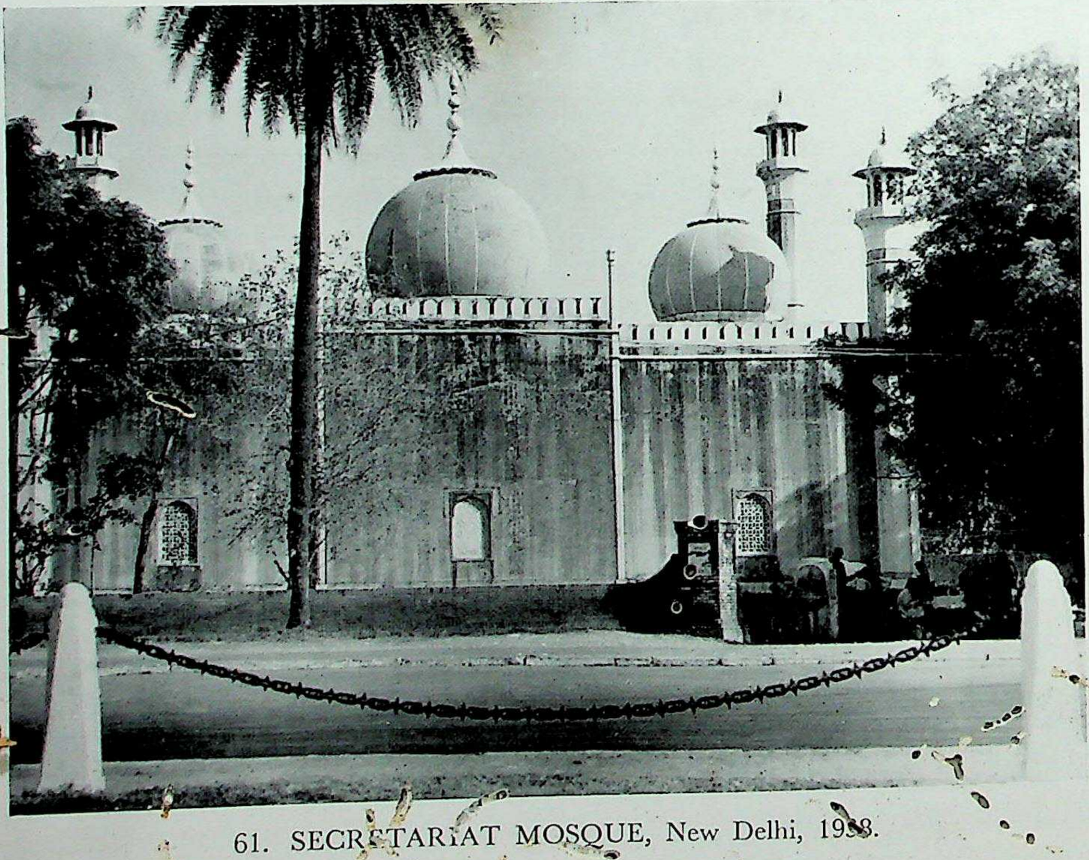
58. SONERI MOSQUE, Delhi, 18th century.



59. IMAMBARA, Lucknow, 18th century.



60. KAISARBAGH PALACE — east gate, Lucknow, 1790.



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